Book 10

# PUBLIC HEALTH RESOURCE NETWORK

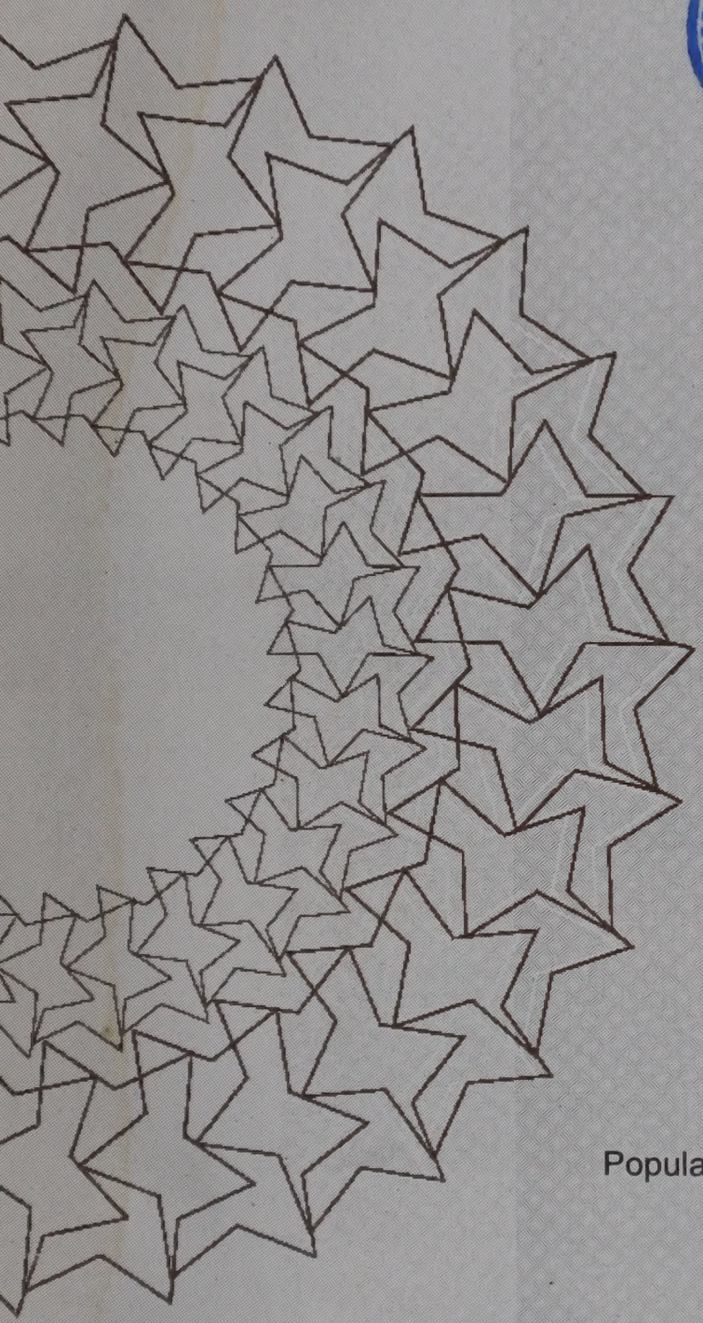
# District Health Planning

NATIONAL RURAL HEALTH MISSION
राष्ट्रीय ग्रामीण स्वास्थ्य मिशन
(2005-2012)

# Book 10

## Public Health Resource Network

# District Health Planning





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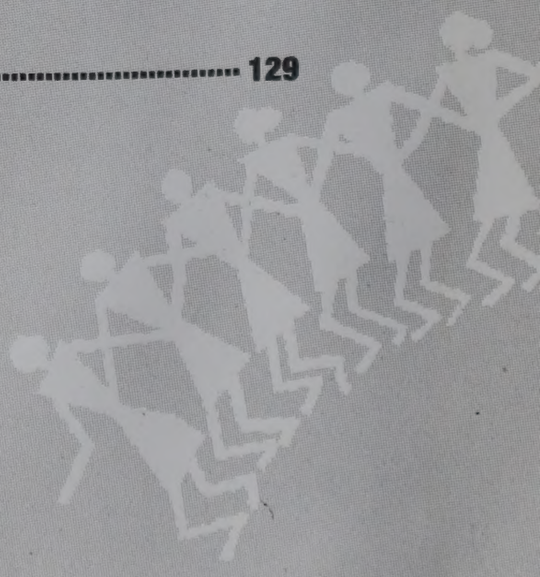
# Contents





# Preface

The National Rural Health Mission's vision of a national programme planned at the district level, and if possible at the village level, needs an exponential increase in capacities at all levels. The NRHM has itself initiated many steps in this direction. However, given the vastness and diversity of the country and the rigidities of the planning and implementing structures, one needs to supplement the official national mission led process with many varied, creative and massive endeavors from state governments, health resource centers, different professional sections and different sections of civil society.

This initiative, called the Public Health Resource Network (PHRN), aims to provide support to public health practitioners working in the districts in all aspects of district health planning and public health management. The central element of this initiative is a capacity building effort structured as a distance learning programme. This distance learning programme is not a substitute to formal professional public health training and it does not carry with it any guarantees of increased employment or career options. It is meant to support individuals and organizations both within and outside the health department who are committed to working for a more equitable and effective public health system. This programme complements official training and education programmes through an open-ended, more informal and immediate reaching out with information, tools and a diversity of programme options and perspectives. The course faculty and editors of the modules are drawn up exclusively from those who have been active in various states in providing support to governments and non governmental organizations in health and related sectors. This programme itself is being organized primarily by a number of agencies already providing resource support to states on different aspects of NRHM programmes.

A mission needs missionaries, and it needs them where the challenges are greatest- in the remote and most underdeveloped areas of the northern and eastern states. A Health Mission needs them to also be professionals – where being a professional is not one more form of privilege- but a competence that anyone willing to put in the time and effort —- and a little expense — can acquire!! Thus the contact programmes at district, regional and state level would evolve into mechanisms of sharing of resources, working and mutual solidarity of those who work for change , and of those who work in the health sector because they seek to work for the poor. The true test of the programme is thus not the number of certificates that we issue but the better quality of district plans, a higher motivation of district teams and eventually better health outcomes in the district.

The first batch starting with this module will serve as a pilot and therefore some of the support systems needed at the regional and state level will not fully be in place. But we hope to learn from this for a much larger batch to start soon after. In the meantime, we also hope to have developed many more partners at the state and district level so that the programme can be scaled up from its current modest dimensions into much more ambitious levels that can make full use of the window of opportunity that the NRHM represents.

We therefore appeal to all the course participants of this first batch as well as those who chance upon these modules to actively give us feedback to improve this programme in all its dimensions.

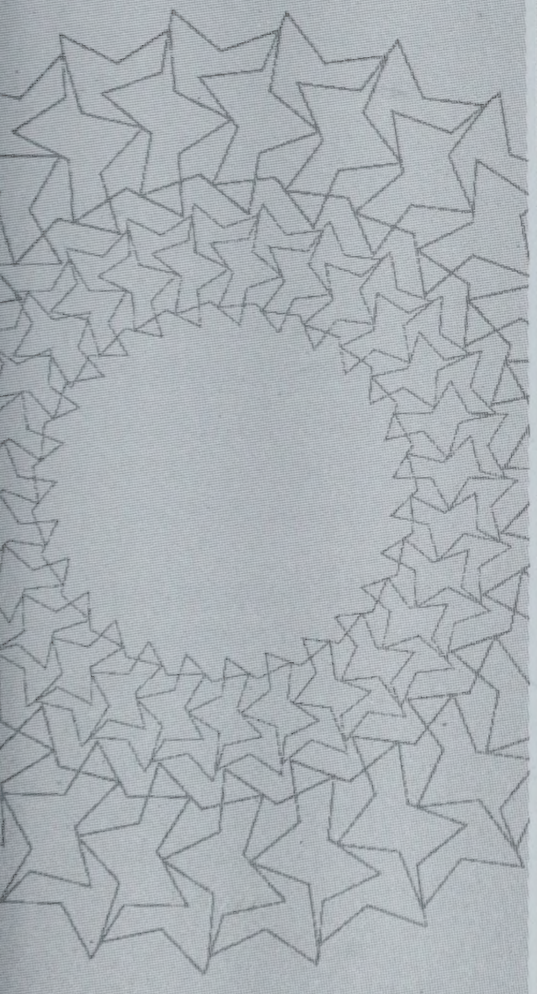
**Dr. T. Sundararaman**
**PHRN Programme Coordinator**

# Lesson ONE

## District Health Planning - An Overview

### In this lesson we shall discuss:

- Why district plans have gained importance now.
- What the problems and limitations of district plans are.
- Process of district health planning.



## CURRENT CONTEXT OF DISTRICT HEALTH PLANS

District Health Plans are not a new idea. However, they have currently assumed a new centrality and urgency in the context of the National Rural Health Mission. Why is this so?

### Addressing Local Needs and Local Specificities

Districts vary widely in needs and even more widely in possibilities for intervention. Thus, in one district, there may be a problem of drug resistance in malaria control programme, whereas in another district the need may be to integrate malaria control with filarial control. A district may have an active private sector even in small towns with which partnerships may potentially be explored, whereas in another this may not be the case. In a largely agricultural district, milk may be widely available and consumption of milk by children may be part of the culture, whereas in a nearby tribal district this will probably not be the case. In some districts, a lot of advocacy work may be needed before life-skills or sex education can be introduced in schools, another district which is more urbanised and in which a supportive and vocal leadership exists, this may be welcomed. Thus strategies have to be district specific, not only because health needs vary, but because perceptions of people and capacities to conduct programmes also vary. In a plan which is centrally made and driven, there is little room for such adaptation.

### Enabling Decentralisation and Public Participation

In principle the nation is committed to substantial decentralisation of power to elected bodies of local governance so as to bring governance closer to the people, and allow people to have a greater say in decision making. District Level Planning is a necessary component of any effort at decentralisation. Of course, though it is a necessary condition of decentralisation, it is not a sufficient condition. Also there is a principle that people have a right to take part in decisions that affect their lives. This is literally the truth for the health sector. District Planning and even more local levels of planning give them the scope to do so.

### Facilitating Interdepartmental Convergence

One major area requiring reform is the coordination between various departments contributing to health. Currently they operate de-linked from each other, leading to wastage of resources and a lot of inefficiencies. There is a need to have effective coordination between all health related sectors like water and sanitation, nutrition and food security, education, environment etc to ensure health outcomes. There is also a need for coordination between different disease control programmes and RCH programmes and for integrating these closely with the management of different facilities like CHCs, PHCs and District Hospitals. Planning at the district level makes uses of the resources made available from numerous "vertical" programmes into a single "horizontally integrated" district plan.

### Improving Accountability of Health Systems

By clearly stating what the problems and goals of the health sector are at the local level, the district plan brings the whole process of health sector functioning into public scrutiny. Of course, for this to happen, the district plan has to be available as a public document and be used for social appraisal and social audit.

For these reasons, district planning of health has been made one of cornerstones of the National Rural Health Mission's Programme.

**DISTRICT HEALTH PLAN**

- Address local needs and specificities
- Enable decentralization and public participation
- Facilitate interdepartmental convergence
- Improve accountability of health systems

## DISTRICT PLAN OR SUM OF VILLAGE PLANS?

Sometimes the questions posed are "Why a district plan? Why not a block plan or village plan? Should not the district plan be only an aggregation of many village plans?"

The National Rural Health Mission envisages three levels of planning which also corresponds to the three levels of local governance – the gram Panchayat, the janpad Panchayat and the district Panchayat.

We need to note the following:

a. Planning at local levels also needs a high degree of capacity. Though some planning could occur- it would not be adequate by itself to improve health status. It would take a well defined process over a number of years to reach the capacity at the village level that would be needed for adequate planning.

b. There are many dimensions of meeting a village's health needs that have to be met outside the village. Thus one cannot provide surgical facilities or diagnostic facilities in every village. Some of these cannot be provided even at the block level. Potentially however every district should have almost all facilities – leaving only research and medical education to higher levels. Even for facilities that have to be provided at the local level, much of the support systems need to be organised from the district level.

c. Most of the resources flow from above and are not raised locally. The process of aggregating each village's requirement to reach a block budget and then a district budget is very difficult and time consuming, and unlikely to make a critical difference when there are many common problems all over.

d. Some village plans are essential to understand the problems at the village level. A sample of village studies or well done plans will contribute better at this stage to making a district plan then trying to aggregate all village plans. A sample of village health plans is indeed advisable.

e. Even at this stage it is useful to encourage and maximise village level planning so as to define better what can be done at that level and involve the community in the process. As long as we do not mechanically expect district plans to emerge through a process of aggregation, there is no objection to beginning the process of village level planning.

f. Block plans however are useful and needed, and a district plan is but a sum of block plans plus some structures and functions that exist only at the district level.

"Some village plans are essential to understand the problems at the village level. A sample of village studies or well done plans will contribute better to making a district plan than trying to aggregate all village plans."

## PROBLEMS AND LIMITATIONS, AND POSSIBLE OUTCOMES OF DISTRICT HEALTH PLANS

The common problems and limitations that would affect a district health planning exercise are listed below:

1. **Limited Technical Capacity:** This is much more so in districts with less urbanisation and less academic capacity development.

2. The **Mind-Set** in the Sector is of obeying orders and unquestioningly accepting technical black boxes. This culture, inherited from our colonial past, refuses to change easily, and rules and guidelines from above are seen as inflexible edicts without which the system cannot function. This is true at the district level and very often even at the state level. The plan, even if it is made, often becomes a standalone, largely academic exercise, which comes to an end with the submission of the plan, and the plan does not inform district health management.

3. **Quality Control:** When innovation and local choice is allowed, too often the choices made are technically or administratively poor choices and sometimes one can have processes hijacked by vested interests. Some degree of guidance and ensuring of quality standards from above is essential. If there is too much guidance and standardisation, the spirit of decentralisation is lost. If it is too little, the quality of planning is poor in many districts, and then the entire idea receives a set back; centralised planning with all its inefficiencies gets justified and re-established as if there is no alternative.

4. **Reluctance to allow public participation and even technical assistance:** Many people, including those that are technically qualified, may be interested in assisting planning, but there is reluctance to be open to criticism and even suggestion. There are a number of reasons for the reluctance - part of it stems from fear of cutting a sorry figure; part of it from not understanding that plans necessarily have to be made participatory, and partly because this is an area of privilege and therefore some people are reluctant to share their expertise.

5. **Resource Allocation:** Too often, districts have to plan without any idea of resource allocation. Everyone assumes that a district officer would know the resources that would be available to him from different sources and programmes. This is far from the truth. Usually they would have the knowledge of resource allocation for some programmes but not for many others. There are also no untied funds, making it difficult/useless to plan for problems or strategies that are not already part of a central or state level programme. It also works the other way - district plans, even well made ones, do not necessarily lead to the availability of the required budgets. Sometimes, the planning process is not in phase with financial management (i.e. the demands for the next round of financial allocations may have to be prepared before the planning process is complete and a hurriedly-prepared plan is put up); sometimes the budgets demanded come back reduced in such a way that it paralyses the entire plan by taking away or curtailing an essential component.

6. **Power:** Most often programmes come with fixed guidelines and district teams have no powers to alter them. Their powers even on human resources management and financial reallocations are limited. There is also a natural reluctance of those who enjoy power at higher levels in allowing some of it to be transferred down.

7. **Shifting the Problems and Not Solving them:** Sometimes all that district plans and decentralisation achieves is that it shifts the onus of poor performance to the districts and reduces pressure of work at the state level. But this is really a poor understanding of what powers and functions should be decentralised and what functions should remain centralised. The most important concern of the state leadership is to ensure adequate quality and outcomes in all districts and a reduction of disparities – regional and within districts- and there is a role for active guidance from the state to districts which are doing poorly. There are also a number of vital state level support functions. It is

important therefore for district plans to clearly indicate what support it would need from the state and national structures.

8. **Time Horizons of Planning:** Most outcomes of planned intervention would take a number of years, over three to five years, for the impact to show. In such a time span, many administrators and decision makers would change. One problem of this is to maintain continuity and an institutional memory of what has gone into the planning process, so that each year there is an improvement over the previous year. One would never get the district plan right at the first effort –one needs to learn and correct repeatedly. This requires an institutional framework where such memory can be built and have enough influence on decision makers. The other is that decision makers tend to plan with very short time horizons- usually as short as one or two years. This favours highly visible and very short term efforts/processes, and these, as a rule, will have poor outcomes. This is a problem of planning at all levels, but given the weak institutional structures at the district level these problems are much more in the district.

> *Most outcomes of planned intervention would take a number of years for the impact to show... Maintain continuity and an institutional memory of what has gone into the planning process, so that each year there is improvement over the previous year.*

The eight problems above are listed in descending order of what the most immediate and addressable/ remediable factors are. Other factors lower down in the list may be more important, but would take a more favourable environment to change. For example, something like a shift of more powers to Panchayats would only be useful in a context where the factors above it in the list have been at least partially addressed.

Do so many limitations and cautions make district planning ineffective? What could we hope to achieve? Below is the list of the minimum outcomes that can be expected.

## MINIMUM POSSIBLE OUTCOMES OF DISTRICT HEALTH PLANS IN CURRENT CONTEXT

- Builds a good database on district health situation and facilities.
- Helps identify priorities and estimate total resource requirements.
- Helps programme managers to plan better for implementing state and national programmes.
- Could be used to promote public understanding of health issues and promote public participation and accountability of the health sector.
- Builds capacities, especially institutional capacities and confidence for furthering decentralisation.
- Can bring focused inter-sectoral attention to bear on *some* district health priorities and show a measurable change.

## PROCESS OF DISTRICT HEALTH PLANNING

The process of planning is important. Given below is a brief summary of 11 critical steps in this process:

1. Constitution of the Planning Team
2. Preliminary Meeting with District Health Society
3. Identification of Technical Support Agency
4. Collection of Data/ Studies for Situational Analysis
5. Preparation of Draft report
6. Block level Consultations and Stakeholder Dialogues
7. Pre-final Draft Report
8. Preliminary Appraisal
9. District Planning workshop
10. Final Report
11. Final Appraisal
12. Adoption by District Health Society and District Panchayat
13. Printing and Dissemination of the Approved District Plan

1. **Constitution of the Planning Team:** The preparation of a district health action plan is necessarily an exercise to be conducted by some formal authority such as the District Health Mission, District Health Society or equivalent body, which is empowered to make decisions, which is inter-sectoral and participatory in nature, and has the mandate to make this plan. They can in turn entrust the task of drafting such a plan to a set of persons who are accountable for the task and will complete it in time-bound manner.

Of course nothing prevents a civil society group from constituting their own district planning team and coming up with an 'alternative district health plan' if they are not involved in the planning process or if they are dissatisfied with its outcomes. It would be a very constructive way of advocacy and even of protest. But certainly it is much more efficient and much less wastage of efforts if *everyone who can contribute* and *everyone who wants to contribute* is brought together.

The minimum persons in the formally constituted Planning Team is three to five programme officers of the health department, two or three representatives of NGOs who are known to work in advocacy for health changes, two or three persons from concerned departments, one or two persons with technical expertise from within or outside the district who would be able to assist, and one or two persons from the elected offices if they are interested. We need to remember that the planning team only makes the draft. It becomes the plan only when the District Health Mission/ Society or equivalent body and/or the District Panchayat formally approve it.

2. **Preliminary Meeting with District Health Society:** It is useful to start with a meeting of the District Health Society so that the mandate of the planners, resource allocation, coordination between sectors etc. can be planned out and become a part of the minutes of the Society. It would later help with ownership of the plan by the District Health Society and all its members.

3. **Identification of Technical Support Agency:** There must be a technical agency which has experience of health planning to assist the district planning team. There are many areas where public perception is a poor guide and there are many areas of knowledge that the community does not know even the existence of. Thus the species identification and breeding and behavior patterns of mosquito vectors could be critical to vector control in a high malaria district, but unless an entomologist with experience in malaria is consulted, one would not get the critical inputs needed for planning for malaria control. It may not be possible to get an entomologist in every district (though states like Karnataka, Andhra and Tamil Nadu, which have fared better in malaria control, have provided for it). Therefore we need an agency which can contact the necessary resource centres and get the technical information needed. Even more important, such an agency must know where technical information is necessary and where technical choices or options are available. Of course the district may require the help of a person with report writing or proposal writing skills – but this is not to be confused with technical assistance. The technical support agency may also undertake any studies needed for making the plan.

4. **Collection of Data/ Studies for Situational Analysis:** The next step is getting the basic data needed for a good situational analysis. One part of this is from secondary data – existing reports and studies. The other part of it is from primary data- studies that need to be organised. We need information on what the health situation is, what has been the performance of ongoing programmes and what are the constraints they are facing, what are the perceptions of people regarding their health needs and different programme

options. Much of the expense and effort of district planning is really in this stage. (Time line: One month; studies can continue beyond this as it would help in later years.)

5. **Preparation of Draft Report:** The report thus far is largely a detailed situational analysis and a listing of some broad strategies and options. There is no need for timelines and budgets at this stage. However the situation analysis should mention the constraints clearly. And the draft should also have a list of strategies that would address the key health issues as well as the constraints in current efforts. One can, at this stage, list technical strategies/options for each problem. At this stage, technical inputs are critical. They help in assessing the gaps and quality of the situational analysis and bringing in a larger body of experience /evidence on what works and what does not work. They also help come up with best practices from elsewhere so that there are new options for the stakeholders to consider. This draft has to be in the state language. (Time line: Two weeks.)

6. **Block level Consultations and Stakeholder Dialogues:** This is a good stage for holding consultations. The NRHM suggests that consultations are held at every block level with elected local government representatives and other community representatives. The presentation of the draft at this stage, and at least a circulation of this draft before they come to the meeting, is invaluable to get a good quality input. There is also a need of identifying key stakeholder groups and having discussions with them. The following is a possible list of stakeholders:

   a) elected local governance leaders,
   b) representatives of women's organisations and community based women's groups,
   c) professional bodies like IMA,
   d) NGOs active in health and development work,
   e) unions and service associations of health care providers, and
   f) local journalists.

   It is often useful to hold these consultations separately. Even two hour meetings held back-to-back over two days are sufficient if the draft has been circulated before and the groups are not very large. (Timeline: Two weeks.)

These block level consultations and stakeholder dialogues should provide inputs on:

a. Community level health concerns, specifically those of women and vulnerable groups
b. Concerns of the providers and service gaps as identified by the functionaries at the block level
c. Geographical areas/Panchayats requiring greater focus and attention
d. Possible roles that need to be played by the Panchayats and community groups such as the self-help groups

e. Areas for inter-sectoral dialogue, coordination, budget and activity planning.

7. **Pre-final Draft Report:** At this stage, it becomes important to know the resource envelope (the total funds that would be available from all sources) available to the district. The district plan is then detailed out, clearly stating objectives, activities and indicators and the budget and if possible, the log frame. The inputs of all the consultations and the technical inputs are now incorporated. This entire stage is done in the headquarters or a suitable retreat – when the core of the team sits down and writes the whole document out. (Timeline: 3-7 days.) This may be done also in the state language or only an executive summary be made available in the local language.

8. **Preliminary Appraisal:** It is useful to have a preliminary appraisal if possible at this stage from the state level. This is so that minimum quantity of outcomes is assured and there are not major deviations from the norms. (Timeline: 14 days.)

9. **District Planning Workshops:** The draft is circulated to key programme officers and decision makers and a workshop is organised where the plan is presented in its final form. The participants at this 1 or 2-day workshop then go through each section carefully and finalise the content. (Timeline: 2 days for the workshop, but also about 14 days to get a suitable date.)

10. **Final Report:** The inputs of the district planning workshop are incorporated within the next one or two days with spending priorities, so that at different levels of available funds, the plan is clear about which are the prioritised components. (Timeline: 2 days after workshop.)

11. **Final Appraisal:** The report is sent to the state appraisal committee. There should be few changes at this stage though some changes may become essential due to the processes of obtaining a political approval. The committee should then send a formal appraisal report. (Timeline: 2 weeks.)

12. **Adoption of Plan by District Health Society and District Panchayat:** The final report with suggestions of the appraisal committee is placed before the District Health Society and this meeting takes decisions on the suggestions, incorporates them in consultation with the planning team and approves the draft.

13. **Printing and Dissemination of the Approved Plan:** The formal district health action plan is printed and copies given to all those who were involved in the exercise as well as well as to all heads of Gram Panchayats, Block Panchayats and to all district Panchayat members. Copies can be made available at cost to anyone else who wants it. Ideally this is released in a public function. (Timeline: 1 month.)

Given the steps needed to get a useful plan, the process should start every year in October and

be completed by February- a period of four months. The process is very important and will never be a distraction if the writing of the preliminary draft is used to review every programme in depth and decide on what corrections are needed.

### I. Review questions

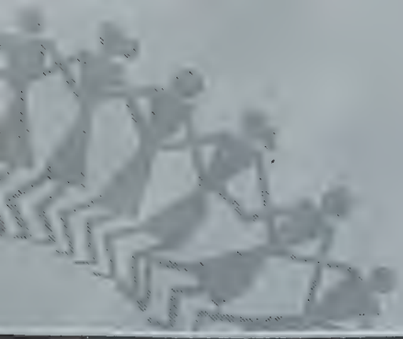
1. What are the typical difficulties of making a good district health plan and pushing it through?
2. What is the process that it should follow? Give steps with timelines.
3. What is the usefulness of this exercise?

### II. Application questions

1. What is the level of devolution and decentralisation of powers to villages in your state and district? Give facts in support of your answer.
2. How can village health and sanitation committees be empowered to participate in the district health plan?

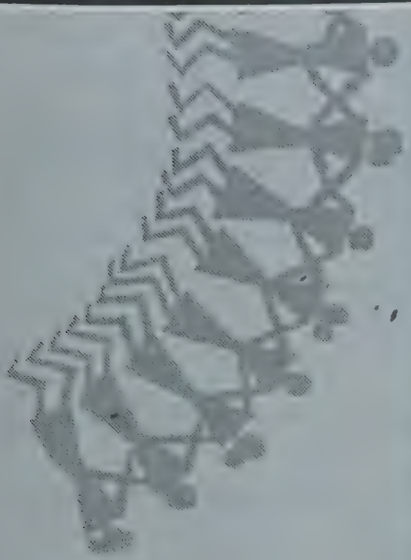
### III. Project assignments

1. Construct an ideal planning team for your district naming actual organisations/ individuals with justification.
2. Identify the constraints to effective district health planning in your district and suggest corrective steps (you may want to refer to the project assignments of earlier lessons that pertained to making district plans on specific issues and the difficulties you faced in doing them.)



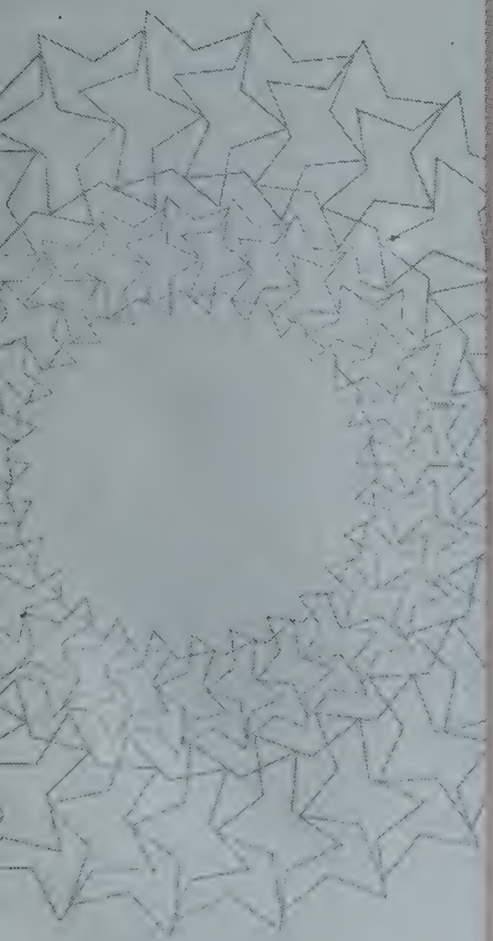
# Lesson TWO

## Objectives and Indicators



### In this lesson we shall discuss:

- Defining goals, objectives and indicators
- How the district sets goals and objectives for itself
- Defining indicators of inputs, activities, outputs, outcomes and impact
- Building indicators
- Indicators in use of Millennium Development Goals
- Framing programme objectives for the district plan



## GOALS OF A DISTRICT HEALTH PLAN

One of the key considerations that go into a plan is the goals and objectives that a programme sets for itself.

The goal of a programme is a societal construct. We noted in Book 1, the goals of the 'Health for All by 2000' document as distinct from the Millennium Development Goals. Both of these represent key understandings of what society, indeed all of organised civilised human society, is committed to.

In that sense, the goals of a district health plan cannot be very different from the goals for health of the Nation and State though there may be differences of emphasis. Theoretically, a political decision could be made by a state or district government to make some other dimension as a goal. For example, a State government could make decentralisation a goal of a health plan, instead of the current understanding of decentralisation as an objective or only an activity. The State government would then be implying that decentralisation is not a means for better health status, but that health policy would be assessed by how much its implementation has contributed to decentralisation. That would be very much in the spirit of the Alma Ata declaration. However, in practice, few states are very innovative, and the need for effective coordination between central and state policy and common structures in governance like the civil service ensures that considerable uniformity is maintained in goals.

Goals are also used in health planning in the sense of a long term direction towards which progress has to be shown but which is not definable in terms of achieved or not achieved targets. Thus a reduction of maternal mortality is treated as a goal – but attaining a maternal mortality below 100 as an objective.

## 'OBJECTIVES'

The term 'objective' is used to state what the programme intends to achieve within a time frame in an accountable manner. Usually objectives need to be definite and potentially measurable. But often an objective is not measurable by itself; there are some objectives like 'women's empowerment' or 'decentralisation' that do not lend themselves to easy measurement. There are others like 'improved child health or improved child survival' which we may use one or more indicator to track changes, but where the indicator does not express the whole of the objective. However they still need to be enshrined as objectives. (The difference between goals and objectives is not always very clear and these terms have considerable overlap. For this reason, many prefer to use goals and then measurable outcomes only and do not separately use the term objectives.)

Thus an indicator like under-5 mortality or IMR is not the same as the goal of child survival or improving child health. There are children over the age of 5 years, and it also does not capture other dimensions like

non fatal illnesses in children or child malnutrition. One could construct a set of indices that would measure all of this, and it is important to be able to do so, but for practical considerations the number of indicators is kept limited.

It is however essential to keep the difference between an objective and its indicator in mind. Too often a programme to address an 'objective' becomes a programme to address the indicator in isolation, which is not the intention of the programme. Given below is an illustrative table on how the goal, objectives and indicators of an example, women's health, can be articulated.

| Issue | Goal | Objectives | Indicators |
|---|---|---|---|
| Women's health | o Improved women's health and nutritional status | o Decreased maternal deaths<br>o Increase in institutional delivery<br>o Increased in skill birth attendance at birth.<br>o Decrease in anaemia in women<br>o Decrease in malnourished women | o Decrease in MMR<br>o Increase in % of childbirths that are institutional/ or that receive skilled assistance at birth.<br>o Decrease in % of women with Haemoglobin less than 11mg/100ml<br>o Decrease in % of women with BMI less than 18. |

## 'OUTCOMES'

Often a district plan would like to state its objectives also in the form of outcomes. This is merely a way of making the programme objectives more specific and even more accountable and measurable by stating exactly what would happen after the programme. Clearly defined outcomes are also easier to have indicators for. Ideally there should not be much of a difference between a statement of objectives and statement of outcomes.

## Features of a Well-framed Objective: The SMART Objective

Framing an objective well is important. One way of remembering the characteristics of a good objective is the acronym, SMART.

| | |
|---|---|
| **S**pecific: | Everyone should interpret it the same way. |
| **M**easurable: | An objective as different from a goal is clearly measurable. |
| **A**ppropriate: | It should directly relate to the programme. |
| **R**ealistic: | It should be possible to achieve this objective. |
| **T**ime: | It should be possible to achieve this within the stated time-frame. |

## 'INDICATORS'

An indicator is a measurement of how well or badly one is doing in trying to achieve something. An indicator is an observable measure of how well we are doing with respect to a specific criterion such as quality, effectiveness, equity etc. Good indicators serve as signposts, and are useful for setting targets to guide activities along the way and for communicating what is expected out of an activity. An indicator also serves as an indirect measurement of some aspect where direct information is not available. Thus though MMR is not available for a district, skilled birth assistance achievements can be used to form an estimate of MMR.

Indicators are essential tools of monitoring progress and of evaluation. Because we know what the programme would be monitored for, its planning becomes that much clearer. The earlier caution needs to be kept in mind that 'short cuts' to achieve the indicator which miss the spirit of what change it is indicating are not welcome.

### INDICATORS ARE OF FIVE TYPES:

**Input Indicators**: A programme needs inputs for its implementation. These inputs are usually human, financial and material resources. Obviously when evaluating a programme we need to be able to relate what has been spent on the programme to its outcomes. This requires monitoring inputs also. Thus in an ASHA programme, the amount of money spent per ASHA is an input to the programme. A place where only half the money has been received cannot perform as well in comparison to another where the complete sum of money was received. If only half the budget of the ASHA programme is expended in the

country as a whole, a 66% performance is an excellent result if quality is maintained. Another important input is the number of people who are working fulltime in implementing the ASHA programme. Obviously

> *a district which has invested in a full time training team is likely to have a better outcome than where various functionaries with other existing responsibilities are intermittently assigned to train and as a result, have spent much less time on the training aspects of the programme.*

**Process/Activity Indicators**: A number of activities need to be carried out to get the intended benefit. We need to know whether these activities took place. Process indicators help us in assessing this. For example the number of ASHAs trained is an activity indicator of the programme, and tells us about the progress of the ASHA programme as per the programme's timelines. This process indicator, which will tell us if the programme is on track, behind or even ahead of schedule, helps us analyse if the inputs in the programme are leading to the expected results and to what extent these inputs are being effective in the programme moving forward.

**Output Indicators**: There should be an immediate result of a process. If we assess the training of ASHAs, for example, they should have acquired new knowledge and skills. But did they? That is what the output indictor measures.

**Outcome Indicators**: This relates to a programme objective or to the measure of effectiveness of a strategy. For example, did the trained ASHAs result in greater use of ORS for diarrhoea or increased exclusive breastfeeding?

**Impact Indicators**: This relates to the goal. Did the programme of training ASHAs lead to decrease in IMR and under-5 child mortality rate? This is what an impact indicator helps determine. In current usage a distinction is not made between outcomes and impact. But it would be useful to do so. Impact is used for overall sectoral goals, and programme objectives would be limited to specific strategies.

For example, the understanding is that IMR is a reflection of many aspects of development and the specific strategy in question is only a small part of it. It is unfair to expect IMR to change only because of the ASHA strategy. However we do need to know whether the ASHA did make any difference to the IMR, which it would if it went along with some other strategies such as strengthening of sub-centres etc. The change of practice as regards use of ORS, or exclusive breast-feeding from the first hour, is however a direct outcome we expect as a result of a functional ASHA. The fact that training has been done is not by itself going to make the change. Thus outcome indicators assess the direct successes of the programme. When outcome indicators are attained but not impact indicators we need to check whether the programme

strategy was correct or sufficient to cause the impact.

If a programme does not achieve its intended outcome- it may be because the output was either insufficient by itself to lead to the outcome or there were other factors that went against it. Thus the ASHA was well trained but did not have adequate support. Or it may be because an output indicator was in fact, not reached, i.e. the ASHAs had not acquired the skills needed to be functional.

Similarly the activity indicator tells us whether the activity was conducted with insufficient quality or not conducted at all. If the training activity indicator shows that the numbers of training days were achieved but the skills were not created, then the quality of the training was the problem. But if the number of days of training to be achieved has not yet been achieved there has been a serious programme failure. Input indicators would help to identify and investigate the cause of this failure.

Quantitative indicators are not all there is to assessing progress – there are many other issues that these indicators do not capture. For example the problem may have been that the appropriate lesson has not been included or properly explained in the training material/syllabus. Qualitative studies are also needed. However when we are managing large programmes across a district one needs to find measurable indices that can be used as a screening device to identify broadly what the problem is and then follow it up with a quick qualitative appraisal to define the problem better.

### Characteristics of an Indicator

If the indicator is used for monitoring and evaluation it has to be valid, replicable, precise, sensitive, specific and more importantly feasible. Let us understand what these mean.

| | |
|---|---|
| **Valid** | A valid indicator exactly measures what it is supposed to measure! |
| **Replicable** | A reliable indicator which gives the same result every time it is measured, no matter who collects the data. It is the index of reproducibility. |
| **Precision** | It is the ability of the indicator to yield a result that is closest to the truth. |
| **Sensitive** | It should be able to show differences in a situation. |
| **Specific** | It has to show a specific change in relation to the criterion of interest rather than be the product of many different changes. |
| **Feasible** | It should be simple to collect and analyse the data for it. |

### Importance of Public Understanding of Objectives and Indicators

Is it important for all involved in the planning process to know this?

It is indeed important, so as to make planning a thorough exercise with the programme accountable or measurable against certain commonly-agreed objectives and indicators, as well as make future programmes evidence-based. There are always strong stakeholders whose perceptions would dominate the planning and the evaluation process. In the absence of evidence, planning could highlight the whims and fancies of someone in command – may be a Minister in charge, or a Chief Medical Officer or a District Collector. Sometimes people take positions on ideological grounds- like all privatisation is bad, or that government sector will never have motivation and cannot deliver quality services – and fail to see the evidence on the ground. Or people have vague expectations like expecting miracles of the ASHA; an evaluation study might say that there is an ASHA everywhere, but no 'health for all', as if ASHA could have, by herself, delivered health for all. But if we had used as outcome indicators, the number of mothers who breastfeed their children in the first hour, or number of diarrhoea cases who used ORS, then we can defend or criticise the programme keeping these indicators central to our analysis.

Further, the press may note that ASHAs are non-functional in a district and print that the whole ASHA programme has failed because ASHA is not paid, whereas with the use of indicators we may be able to establish that the ASHA programme had not received funds for training after the first round and that was the real problem.

### Example of Good and Bad Indicators for a district plan:

| Issue | Indicator | What is the problem with the Indicator? |
|---|---|---|
| Child malnutrition | Number of children who have clinical signs of marasmus or kwashiorkor | Not valid. Signs of marasmus and kwashiorkor are only a small part of child malnutrition and not seen even in severe malnutrition. |
| Prompt health care seeking for children with ARI/pneumonia | Number of children for whom health care was sought appropriately | Not reliable. Each data collector would have a different interpretation of what is appropriate. It should have been framed as cases identified as pneumonia by standard treatment guidelines who had sought treatment within 24 hours of developing these set of symptoms. |
| Prevalence of pulmonary tuberculosis | Number of cases who are positive on sputum examination | Not sensitive. Number of cases of tuberculosis would be missed, if we went only by this. |
| Prevalence of tuberculosis | Number of persons with cough over three weeks and fever | Not specific. There would be many people who would be positive for this indicator but who would not have tuberculosis. |
| Care in pregnancy and maternal mortality | MMR | Not feasible. Almost impossible to collect, especially in the district level. |

**Caution:** The categorisation in goals, objectives and outcomes and the categorisation of indicators into output, outcome and impact admit of considerable overlaps and inter-changeability.

Different authors tend to use these terms differently – and very often what is correct is decided by international funding agencies and the stature they and their supportive academic institutions enjoy. For example there is little difference between goals and objectives the way it is often used and the term impact is out of use. There are those who would use ultimate outcome, intermediate outcomes, strategies, and activities instead of the above terms. Activists or people in advocacy need to understand the language and be able to keep the meaning intact while playing around with the semantics. Do not let yourself get confused or embarrassed by not knowing the usage you encounter. Seek clarifications. Most importantly, realise the principles behind the use of varied terms for these will be most useful.

## MDG INDICATORS

Look at pages 22-23 for a set of 48 indicators used by the Millennium Development Goals Programme. The MDG uses 'targets' much as we would use the term 'objectives' or 'outcomes'. We can study this in relation to the terms we used to understand how indicators can be framed .The goals and targets related to health need to be reflected in our district health plans also.

## FRAMING PROGRAMME OBJECTIVES FOR THE DISTRICT PLAN

The framing of objectives for a district plan is dependent on two considerations:

a) Coherence with national and state level goals
b) Incorporation of understanding of needs, programme effectiveness and constraints as assessed from situational analysis.

The setting of objectives needs some reflection and imagination and a fair theoretical grounding. The usual process is to have a group session where one makes a list of many objectives and then to edit the list till we have a very clear statement of objectives. Though planning requires imagination and theoretical understanding, the system doesn't often allow it; it has so often rejected 'academic knowledge' that it is not easy for it to surpass its own limited experience to engage with the larger body of knowledge in books which represents theory. So beyond participation, there is a need to access the literature on different problems, relate it to possible strategies and then use it to formulate objectives.

Each objective should be a crisp sentence written with clarity and precision. Ideally it is better to not have more than five to ten objectives – though like in the millennium declaration component we could elaborate it into more number of specific outcomes and indicators. Each of these should also be a brief, clear, precise statement.

Once the objectives are clear there is also the need to set the indicators for these outcomes, and then work backwards to define the strategies, activities, and their indicators.

| GOAL | TARGET |
|---|---|
|  **1: Eradicate Extreme Hunger and Poverty** | **1.** Halve, between 1990 and 2015, the proportion of people whose income is less than $1 a day |
| | **2.** Halve, between 1990 and 2015, the proportion of people who suffer from hunger |
|  **2: Achieve Universal Primary Education** | **3.** Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling |
|  **3: Promote Gender Equality and Empower Women** | **4.** Eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015 |
|  **4: Reduce Child Mortality** | **5.** Reduce by two-thirds, between 1990 and 2015, the under-five mortality rate |
|  **5: Improve Maternal Health** | **6.** Reduce by three-quarters, between 1990 and 2015, the maternal mortality ratio |
|  **6: Combat HIV/AIDS, Malaria and other diseases** | **7.** Have halted by 2015 and begun to reverse the spread of HIV/AIDS |
| | **8.** Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases |
|  **7: Ensure Environmental Sustainability** | **9.** Integrate the principles of sustainable development into country policies and programs and reverse the loss of environmental resources |
| | **10.** Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation |
| | **11.** Have achieved by 2020 a significant improvement in the lives of at least 100 million slum dwellers |
|  **8: Develop a Global Partnership for Development** | **12.** Develop further an open, rule-based, predictable, nondiscriminatory trading and financial system (includes a commitment to good governance, development, and poverty reduction, both nationally and internationally)<br>**13.** Address the special needs of the Least Developed Countries (includes tariff- and quota-free access for Least Developed Countries? exports, enhanced program of debt relief for heavily indebted poor countries [HIPCs] and cancellation of official bilateral debt, and more generous official development assistance for countries committed to poverty reduction)<br>**14.** Address the special needs of landlocked developing countries and small island developing states (through the Program of Action for the Sustainable Development of Small Island Developing States and 22nd General Assembly provisions)<br>**15.** Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term |
| Some of the indicators listed alongside are monitored separately for the least developed countries, Africa, landlocked developing countries, and small island developing states. | **16.** In cooperation with developing countries, develop and implement strategies for decent and productive work for youth |
| | **17.** In cooperation with pharmaceutical companies, provide access to affordable essential drugs in developing countries |
| | **18.** In cooperation with the private sector, make available the benefits of new technologies, especially information and communications technologies |

## INDICATOR

1. Proportion of population below $1 (1993 PPP) per day (World Bank) a*
2. Poverty gap ratio [incidence x depth of poverty] (World Bank)
3. Share of poorest quintile in national consumption (World Bank)

4. Prevalence of underweight children under five years of age (UNICEF-WHO)
5. Proportion of population below minimum level of dietary energy consumption (FAO)

6. Net enrolment ratio in primary education (UNESCO)
7. Proportion of pupils starting grade 1 who reach grade 5 (UNESCO) b*
8. Literacy rate of 15-24 year-olds (UNESCO)

9. Ratio of girls to boys in primary, secondary and tertiary education (UNESCO)
10. Ratio of literate women to men, 15-24 years old (UNESCO)
11. Share of women in wage employment in the non-agricultural sector (ILO)
12. Proportion of seats held by women in national parliament (IPU)

13. Under-five mortality rate (UNICEF-WHO)
14. Infant mortality rate (UNICEF-WHO)
15. Proportion of 1 year-old children immunized against measles (UNICEF-WHO)

16. Maternal mortality ratio (UNICEF-WHO)
17. Proportion of births attended by skilled health personnel (UNICEF-WHO)

18. HIV prevalence among pregnant women aged 15-24 years (UNAIDS-WHO-UNICEF)
19a. Condom use at last high-risk sex (UNICEF-WHO)
19b. Percentage of population aged 15-24 years with comprehensive correct knowledge of HIV/AIDS (UNICEF-WHO) d*
19c. Contraceptive prevalence rate (UN Population Division)
20. Ratio of school attendance of orphans to school attendance of non-orphans aged 10-14 years (UNICEF-UNAIDS-WHO)

21. Prevalence and death rates associated with malaria (WHO)
22. Proportion of population in malaria-risk areas using effective malaria prevention and treatment measures (UNICEF-WHO) e*
23. Prevalence and death rates associated with tuberculosis (WHO)
24. Proportion of tuberculosis cases detected and cured under DOTS (internationally recommended TB control strategy) (WHO)

25. Proportion of land area covered by forest (FAO)
26. Ratio of area protected to maintain biological diversity to surface area (UNEP-WCMC)
27. Energy use (kg oil equivalent) per $1 GDP (PPP) (IEA, World Bank)
28. Carbon dioxide emissions per capita (UNFCCC, UNSD) and consumption of ozone-depleting CFCs (ODP tons) (UNEP-Ozone Secretariat)
29. Proportion of population using solid fuels (WHO)

30. Proportion of population with sustainable access to an improved water source, urban and rural (UNICEF-WHO)
31. Proportion of population with access to improved sanitation, urban and rural (UNICEF-WHO)

32. Proportion of households with access to secure tenure (UN-HABITAT)

**Official development assistance (ODA)**
33. Net ODA, total and to LDCs, as percentage of OECD/Development Assistance Committee (DAC) donors' gross national income (GNI)(OECD)
34. Proportion of total bilateral, sector-allocable ODA of OECD/DAC donors to basic social services (basic education, primary health care, nutrition, safe water and sanitation) (OECD)
35. Proportion of bilateral ODA of OECD/DAC donors that is untied (OECD)
36. ODA received in landlocked developing countries as a proportion of their GNIs (OECD)
37. ODA received in small island developing States as proportion of their GNIs (OECD)

**Market access**
38. Proportion of total developed country imports (by value and excluding arms) from developing countries and from LDCs, admitted free of duty (UNCTAD, WTO, WB)
39. Average tariffs imposed by developed countries on agricultural products and textiles and clothing from developing countries (UNCTAD, WTO, WB)
40. Agricultural support estimate for OECD countries as percentage of their GDP (OECD)
41. Proportion of ODA provided to help build trade capacity (OECD, WTO) Debt sustainability
42. Total number of countries that have reached their Heavily Indebted Poor Countries Initiative (HIPC) decision points and number that have reached their HIPC completion points (cumulative) (IMF - World Bank)
43. Debt relief committed under HIPC initiative (IMF-World Bank)
44. Debt service as a percentage of exports of goods and services (IMF-World Bank)

45. Unemployment rate of young people aged 15-24 years, each sex and total (ILO) f*

46. Proportion of population with access to affordable essential drugs on a sustainable basis (WHO)

47. Telephone lines and cellular subscribers per 100 population (ITU)
48. Personal computers in use per 100 population and Internet users per 100 population (ITU)

**Exercise**

There is a programme for malaria control which has decided to focus on the use of insecticide treated bed nets as one of its strategies. Decide what are the goal, the objective, the outcome indicator, the output indicator, the activity indicator and the input indicator for this programme.

**Outcome indicator:**

**Goal**: Reduction in malaria
**Objective**: Effective use of bed nets

- The % of children under-5 sleeping under insecticide-treated bed nets is over 75%, and /or
- The API (annual parasite index) in the area decreases from current level of 9 to 2.

**Output indicator:**

- The number of bed nets distributed to families which are being used.
- The number of persons who have knowledge of how bed nets help and why they are essential for children in that area.
- Those who expressed willingness to use bed nets.
- Those actually using bed nets

**Process indicator:**

- The number of beds nets distributed.
- The number of kalajatha programme carried out.
- The number of village volunteers trained in communication.

**Input Indicator:**

- Number of bed nets received.
- Funds received for training and *kalajatha* programmes

**Discussion**

It would be acceptable to use reduction of API as outcome and % of children under-5 using bed nets as the output and what is shown as output above as the activity indicators; many would indeed do so. But it is much more useful this way, as it is more helpful for assessing problems and managing them.

## I. Review Questions

1. What do you understand by goals and how do they differ from objectives?
2. What are the types of indicators in use?
3. Should we spend time and effort in making the planners and the public understand these concepts? Why?
4. What are the 5 characteristics of a good indicator?
5. What are the goals, outcomes, indicators as related to HIV control, to tuberculosis control and to malaria control in the MDGs?

## II. Application Questions

1. If the outcome required is to increase the % of deliveries who receive skilled assistance at birth, what would be the output indicators, the activities and the inputs and their indicators?
2. If there is BCC programme for countering the son-preference that leads to sex selective abortion, what would be the outcome, output and activity indicators you would choose?
3. If RTI has emerged as a major problem in the situational analysis could you evolve a set of objectives, outcome indicators, output indicators, activity indicators that would help you define the programme.
4. Of the MDG goals, targets and indicators, are there any that you think need to be modified for use in your district plan's context? How would you modify these?

## III. Project Assignment

1. A number of programme areas are addressed in the first ten books. Frame a set of objectives for the health issues which are a problem in your area using information from the project assignments done along with those modules.
2. For the above objectives – suggest the indicators.

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Footnotes *(For the table on the pages 22-23)*:

a. For monitoring country poverty trends, indicators based on national poverty lines should be used, where available.

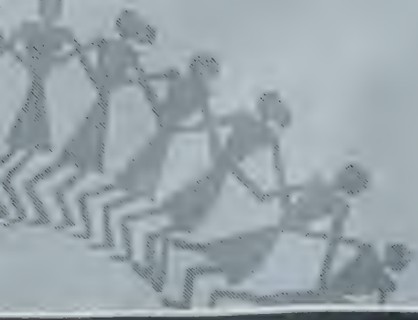
b. An alternative indicator under development is "primary completion rate".

c. Among contraceptive methods, only condoms are effective in preventing HIV transmission. Since the condom use rate is only measured amongst women in union, it is supplemented by an indicator on condom use in high-risk situations (indicator 19a) and an indicator on HIV/AIDS knowledge (indicator 19b). Indicator 19c (contraceptive prevalence rate) is also useful in tracking progress in other health, gender and poverty goals.

d. This indicator is defined as the percentage of population aged 15-24 who correctly identify the two major ways of preventing the sexual transmission of HIV (using condoms and limiting sex to one faithful, uninfected partner), who reject the two most common local misconceptions about HIV transmission, and who know that a healthy-looking person can transmit HIV. However, since there are currently not a sufficient number of surveys to be able to calculate the indicator as defined above, UNICEF, in collaboration with UNAIDS and WHO, produced two proxy indicators that represent two components of the actual indicator. They are the following: (a) percentage of women and men 15-24 who know that a person can protect herself from HIV infection by "consistent use of condom"; (b) percentage of women and men 15-24 who know a healthy-looking person can transmit HIV.

e. Prevention to be measured by the percentage of children under 5 sleeping under insecticide-treated bednets; treatment to be measured by percentage of children under 5 who are appropriately treated.

f. An improved measure of the target for future years is under development by the International Labour Organization (ILO).

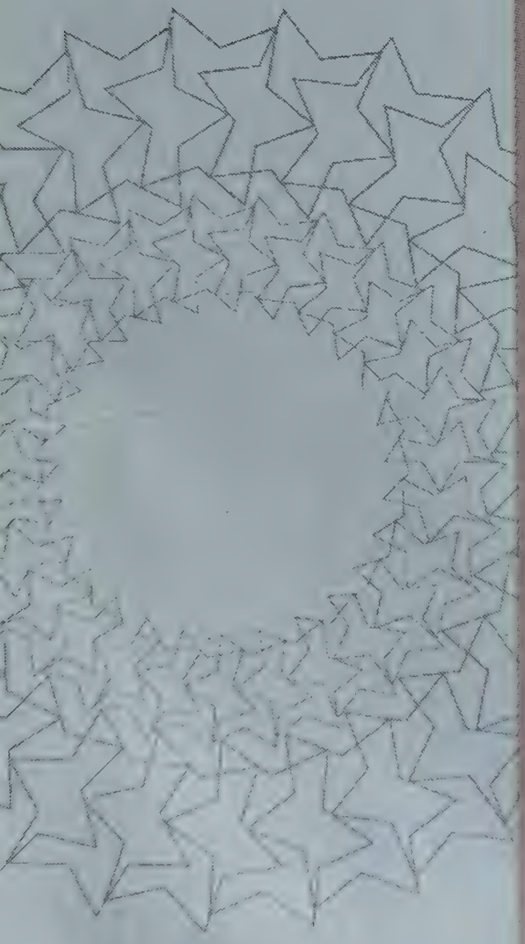


# Lesson THREE

## District Health Action Plan: Structure and Components

### In this lesson we shall discuss:

- Structure of a district health plan.
- Various components of a district plan.
- Situational analysis and strategies for addressing different plan components.
- Approach to drafting the work plan.



## STRUCTURE OF THE DISTRICT HEALTH ACTION PLAN

There are many possible ways in which a District Health Action Plan (DHAP) this could be structured. The NRHM in its guiding manual has suggested a structure that we could use as it is simple and effective.

We reproduce its guidelines below, with a few modifications introduced for clarity, especially separating out strategies and activities from the objectives. The DHAP document is the ultimate product of the entire planning exercise and will be reference document for district NRHM management. ...A structure of this document is being suggested where there are 7 sections.

### 1. Background

This section should include information on geographic location, socio-demographic profile of the district and also information on key health indicators (from recent data sets).

### 2. Situation Analysis

The district team should reflect on following parameters while giving analysis in key programme areas:

- Key health indicators and health status
- Current programme status and coverage with preventive/promotive interventions
- Income and gender equity relationships to health
- Underserved population groups
- Quality of services – service quality and community perspectives
- Programme environment – eg. vacancies, physical, infrastructure etc.

### 3. Process for Plan Development

It will be appropriate to describe the processes undertaken, such as any specific desk reviews commissioned, block and district level consultations and profile of participants, participation from other sectoral departments in the planning process. A brief introduction or profile of members included in the district planning team and the technical assistance used may be also useful.

### 4.1. Objectives

Objectives set out for the districts ..... should be spelt out giving qualitative levels of achievements.

### 4.2 Strategies and Activities

This should be followed by a listing of key strategies and description of activities to operationalise the key strategies. Both costed and non-costed activities should be reflected here. Wherever possible, activities should be quantified and geographical spread be delineated.

### 5. Workplan

Workplan should reflect how different activities will be conducted with special references to time frame and also identify responsible official or agency as the case may be. This may be given in the form of a table or programme evaluation review technique (PERT) chart.

### 6. Monitoring & Evaluation

Essential components of this chapter should be in synergy with larger NRHM monitoring but what more is needed for effective monitoring at district level should also be stated. Flow of data from different levels, i.e., service delivery, community monitoring and long scale data sets is considered.

The indicators may be stated here – but these may also be cross-referenced to the logical framework.

### 7. Budget

Unit costs should be given for each costed activity and source of funding be also reflected.

**Sructure of a DHAP:**

- Background
- Situation Analysis
- Process for Plan Development
- Objectives
- Strategies and Activities
- Workplan
- Monitoring and Evaluation
- Budget

## COMPONENTS OF THE DISTRICT HEALTH ACTION PLAN

Every one of the aspects above will relate to several thematic components each relating to a sub-sectoral objective. Thus thematic components, such as malaria control, will require its own situation analysis, its objective, its set of strategies and activities and its work plan and budget estimates which has to be integrated with the plans for all other thematic components. Thematic components need not be only programme specific- they may relate to some component of the health system like drug procurement and distribution, or functioning of district hospitals etc.

Below is a possible list of such health system thematic components of a district health action plan.

1. Providing Quality Services in Health Facilities
   a. Strengthening Sub-centre functioning
   b. Primary health centre
   c. Achieving IPHS norms in service delivery for CHCs
   d. District hospitals

2. Support Systems to Health Facility Functioning
   a. Referral transport systems
   b. HMIS
   c. Procurement and logistics management for drugs and supplies
   d. Addressing equipment gaps in the above
   e. Addressing infrastructure gaps in the above

3. Community Participation Initiatives
   a. ASHA programmes
   b. Capacity building for Panchayats and for local village planning
   c. Other community initiatives

4. BCC Programmes (may be written along with various programme components- with a summary of all of it over here)

5. Training Activities

6. Addressing Human Resource Availability & Management Issues

7. District and Block Level Management for all above

8. RCH Programmes
   a. Reduction of maternal mortality
   b. Other women's health issues
   c. Child health issues
   d. Immunisation including pulse polio

9. Disease Control Programmes
   a. Tuberculosis
   b. Vector borne disease control programmes
   c. HIV control programmes
   d. Leprosy control programmes
   e. Epidemic response systems
   f. Other locally identified disease control priorities including non communicable diseases
   g. Disease surveillance programme

10. Nutrition and Food Supply Issues – with emphasis on ICDS services

11. Water and Sanitation Programmes

12. School Health Programmes

13. Special Programmes for Urban Areas

14. Special Programmes for Tribal Population.

15. Special Programmes for other Vulnerable Groups

16. Gender and Equity Issues would be a part of each component – but a separate discussion at the end of each section is desirable.

17. Private Sector Interventions: This would also be a part of each chapter – but there would be a need for also addressing it as a separate component which summarises the involvement in various components, spells out general measures separate section esp as regarding certain functions of regulation.

18. Technical Assistance requirements and other inputs needed from outside the district may also be summarised as a separate component.

19. Further studies needed.

Note: Monitoring and Evaluation is a separate section – like work plan – not one of the thematic components.

### Situation Analysis and Strategies

These sections are best dealt with together and form part of the first draft. As each component is taken up, a situation analysis is made and the strategies are drawn up based on it.

The situation analysis would have the following parts:

a) Describe the health status and health needs with reference to indicators and people's perceptions.
b) Discuss the existing situation with reference to programme implementation for each of the components listed earlier. In particular, describe the constraints that existing strategies are facing. For some issues (for example, staff not serving in remote areas) there is need to record different stakeholder perceptions.

The NRHM in its district planning guide has suggested a number of templates for presenting the situation analysis. These are presented in Annexure 2. These would need to be modified and are best seen as suggestions that are to be built upon locally.

The formulation of goals and objectives has been discussed in Lesson 2.

### Strategies proposed:

- need to be clearly shown to be necessary to reach stated objectives,
- should have some degree of acceptance by key stakeholders,
- should have enough evidence supporting their effectiveness,
- should be cost effective – though this estimate cannot be made very easily at the current levels of expertise except where it is very obvious. It is usually interpreted to mean 'low cost' rather than cost effective,
- would have to be specified separately for each objective though there would be considerable overlaps.

Below we outline the situation analysis and strategies for each component – largely by cross referencing to other PHRN Books where they are discussed in detail.

### Component 1: Facility Functioning

Situation analysis is basically a write up of the data from the facility survey using the forms given in

PHRN Book 1. The focus of the analysis is on what services are to be delivered, what are the gaps, and closing which are vital to making that service available and of sufficient quality. The approach to closing infrastructure gaps and equipment gaps should flow from this understanding with priority given to those inputs that would immediately establish the service. The Indian Public Health Standards are a good reference point and may be used to define what the package of services that should be available. The issue of quality norms and how to reach them is discussed in some detail in Lesson 6 of this Book.

Strategies to address the design issues of service provision in facilities are also discussed in Lessons 4 - 6 of Book 1 and in Lesson 6 of this book as well. Some of these, like the untied funds for Sub-centres, are already being implemented and the situational analysis will help us identify constraints.

### Component 2: For Support Services

**Referral Transport Systems are discussed in Book 1 Lesson 7.** The most successful models of emergency transport in the public health system that are now being widely replicated are the PPP models where the ambulance system is run by an NGO which is provided communication links and reimbursement for transporting BPL patients (described in Lesson 5 of Book 2) There is a case for rapidly expanding the scope and the coverage of this service keeping the basic principles of good PPPs in mind –which would be discussed in Book 12.

However emergency transport is only a part of referral systems. Another part is how the higher referral systems act to expand the capacity of primary health care by facilitating access to higher diagnostics and follow up of chronic patients especially those having non communicable diseases. There are no current success stories in the public sector, but learning from international experience and changing morbidity profiles, it is time to start.

**Health Management Information System** and **Procurement and Logistics of Supplies and Equipment** are discussed in the Book on District Health Management.

The template for presenting this data as given in the NRHM district planning module is annexed.

In **Infrastructure Requirements** – there is a different set of issues which are critical.

The different aspects of this are:

a) Estimating the infrastructure requirements, facility-by-facility, and tabulating them. This is adequate for situation analysis. Infrastructure requirements may be estimated along with estimations of major equipment requirements and presented as a common plan.

(The template for presenting this data as given in the NRHM district planning module is annexed. This is only a brief table. A more detailed infrastructure development plan would be useful.)

b) In drawing up strategies one step is to make cost estimates professionally for requirement showing unit costs – so that costs can be revised if there is a change in the price of materials. This is best done by a professional architect.

c) Drawing up a list of priorities is important so that construction can begin depending on funds available. Areas that are seriously underserved as well as where construction is the critical limitation to start up services may be considered priorities. Thus it is a priority to build an operation theatre at a CHC where surgical skills are available, compared to a place where doctors and specialists are not available. Building a Sub-centre for an ANM with a very good performance and trained for skilled birth assistance is a priority as it can bring up institutional delivery services. This priority list of buildings with its justification should be approved and available at any time. Typically there is a rush to hastily choose sites when funds become available – often leading to absurdly wrong choices and having to succumb to various pressures. Having an approved plan in place would significantly decrease these problems

d) Deciding on arrangements for timely and good quality construction: Many states have had a good experience of letting Gram Panchayats construct the buildings for Sub-centres. Others have had a poor experience of this. Most states have had poor experience with PWD constructions or RES (Rural Engineering Service) construction, for these are rather small tasks and quality issues get pushed back. A third alternative of tendering the task of a set of facilities to a major contractor has also had mixed reports. In contrast to this, in states like Tamil Nadu and Andhra Pradesh, the job has been entrusted to a para-statal government agency placed under an IAS officer, and has had good results. Andhra Pradesh has a health infrastructure development corporation, which also does drugs and equipment procurement and Tamil Nadu has a drug supplies corporation that also undertakes infrastructure tasks. The district plan has to specify whom construction would be entrusted to so as to ensure that it is timely and of good quality.

e) Maintenance is a major issue. One part of the problem is that state budgets provide for it but the budget is not visible district-wise, and subsequently it has been difficult to access these funds. In some states maintenance provision in the state budget is grossly inadequate. In such a context, locally raised funds from user fees or donations at the facility level through the Rogi Kalyan Samiti or equivalent body becomes seen as the major source of funds for maintenance. In some districts this would be adequate and in others, funds from the state would be required. Untied funds placed at the Samiti may have to be prioritised for this purpose.

f) Outsourcing the assessment of infrastructure and equipment needs drawing up a detailed list of

specifications for what buildings need to be built, how much goes into maintenance and how much is needed for equipment are tasks that require time, experience and competence. The making of a detailed infrastructure and equipments requirement plan for each facility, may be outsourced. This ensures that all the work is done up to the stage of tender documents and the hospital development committee can make a decision on fund allocation from its untied funds, leaving the balance to be filled by the state budget.

g) If the infrastructure and equipment requirement plan is further linked to human resource planning and training plans then the services can start up. This is precisely what is being done under the NRHM but the focus has been only on CHCs. The central concern of the district plan must be to take the block as a unit and close all the gaps in it, in all facilities – Sub-centre, PHC, CHC and District Hospital, and not only in the CHC – as the functioning of each facility is dependent on the others above and below it in the pyramid.

### Component 3: Community Participation Initiatives

Both Book 4 and Book 7 deal with this aspect extensively. Book 4 builds a general understanding of community, community participation, organisational resources and largely elaborates the community health worker approach. Book 7 deals with other aspects of community participation.

We note that in addition many topics have their own element of community participation integrated with it. Still a general section on this would probably be required.

### Component 4 & 5: BCC programmes and Training Programmes

The template for presenting this data as given in the NRHM district planning module is annexed. A more detailed assessment of drawing up strategies and institutional and implementation framework is given in Book 5.

### Component 6 & 7: Addressing Human Resource Availability & District and Block Level Management

The template for presenting this data as given in the NRHM district planning module is annexed. In the district health management lesson, issues of workforce management are discussed in some detail. They have also been discussed in the first Book in the discussions on facility development.

### Component 8: RCH Programmes

Book 2 on Maternal Mortality, Book 3 on Child Health and Book 7 on other child health issues address these in considerable detail. There is considerable evidence on what strategies work and what does not work. There is also a considerable body of experience which helps us understand the bottlenecks and

what are the ways these have been overcome within the Indian context. In the course of transacting this material, the approach to situation analysis, assessment of bottlenecks and strategy development would have been completed.

### Component 9: Disease Control Programmes

The district level situation analysis and programme planning for Tuberculosis, Vector Borne Diseases, HIV and Leprosy as well as Disease Surveillance systems have been discussed in Book 8.

### Components 10, 11 & 12: Health Related Sectors

The district plans for these sectors and its coordination with health interventions have been discussed in some detail in Book 9.

### Component 13: Special Programmes for Urban Areas

The urban health plan has a number of specificities not covered by the other thematic components. Key questions are the role of the urban local bodies, the choice of service providers, special efforts to reach vulnerable sections and the level of facility creation/co-option and manpower deployment envisaged. This is discussed separately, in Book 15.

### Component 14: Special Programmes for Tribal Population

The tribal population represents one of the more marginalised communities facing a number of health problems other than having a much lower performance of the public health system. Integration with other aspects of tribal development is also critical to programme outcomes. This is discussed in a separate Book on health programmes for the marginalised, Book 16.

### Component 15: Special Programmes for Other Vulnerable Groups

There are other categories of marginalised people who have special vulnerability to disease, for example, migrants. The elderly and the handicapped are other key groups. These issues are discussed in Book 16, on health programmes for the marginalised.

### Component 16: Gender and Equity

Gender and equity would be a part of each component, but a separate discussion at the end of each section is desirable to put together the strategy on gender mainstreaming, as discussed in Book 6.

### Component 17: Private Sector Interventions

This would also be a part of each chapter – but there would be a need for also addressing it as a separate component which summarises the involvement in various components, spells out general measures separate section esp as regarding certain functions of regulation. This is discussed in some details in Book 12.

**Component 18: Technical Assistance Requirements and Other Inputs** needed from outside the district may also be summarised as a separate component. This is discussed in some detail in Book 14.

## Work Plans

The main component of this is the time schedule and the sequencing of the work. A PERT chart is a very effective way of presenting it. But putting a time schedule on the activities column of the log frame is also a quick way of achieving the same result.

The work plan is best done after the programme budget is approved as the exact quantities and resources sanctioned would make considerable difference to the implementation of the plan. If the resource allocation is well known, there is no problem in this regard. If it is not known, an assumption-based work plan may be submitted - to be modified once the sanction finally arrives.

Work plans may be done month-wise or with milestones for every quarter. The latter is much easier to implement and it allows programme implementers much needed flexibility.

It is best to show only activities and/or outputs in the work plan. The relationship between outputs and outcomes are not a simple direct equation and there is no point in trying to hold a system accountable through such a strategy.

Work plans are however best linked to budgets and expected expenditure – and this helps financial management of the system. But this is difficult task. It takes some effort and some patience and is best done with the help of the finance or at least accounts manager of the system.

The NRHM has circulated in its district plan document a template as a model for a work plan which is given in the following page. One feature of this is that it shows the person responsible for each activity in the last column. Another feature is that it shows the link between outcome, strategy and activity in the second column and shows the quarter when it would be achieved only for the activities.

**Monitoring and Evaluation**, and **Budgeting** are described in some detail in Lesson 5.

## ILLUSTRATIVE TEMPLATE FOR PREPARING WORK PLAN

DISTRICT ACTION PLAN: WORK PLAN FOR TWO YEARS

| Sr No. | Activity | Time frame 2007-09 | | | | | | | | Responsible Person(s) |
|---|---|---|---|---|---|---|---|---|---|---|
| | | 2007-08 | | | | 2008-09 | | | | |
| | | Q1 | Q2 | Q3 | Q4 | Q5 | Q6 | Q7 | Q8 | |
| 1 | MATERNAL HEALTH<br>Universal coverage of all pregnant women with package of quality ANC services as per national guidelines | | | | | | | | | |
| 1.1 | Strengthen outreach sessions for ANC-District Level | | | | | | | | | |
| | 1.1.1 Access:<br>◆ Develop guidelines for sector-wise micro plans for outreach sessions and use of money<br>◆ Additionally identify under-served areas | | | | | | | | | |
| | 1.1.2 Quality<br>◆ Orientation training of ANMs in new guidelines<br>◆ Procurement of kits for ANC | | | | | | | | | |
| | 1.1.3 Demand<br>◆ Organise of safe motherhood day by village health and sanitation committee<br>◆ Development and multiplication of Flash Book to be used by ASHA/AWWs | | | | | | | | | |

## I. Review Questions

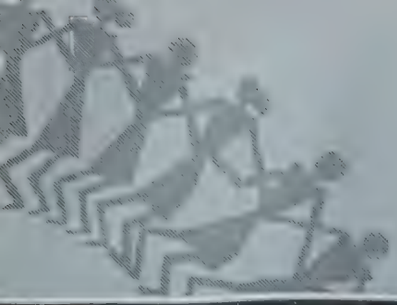
1. What are the various sections of the DHAP as prescribed by the NRHM guidelines?
2. List the various components of a DHAP
3. Describe the processes that must precede the making of the DHAP and the processes and principles for according priority within the plan.

## II. Application Questions

1. What is the value of a well made DHAP over and above the fact that it is a formal requirement of the NRHM and is required to be able to access funds?

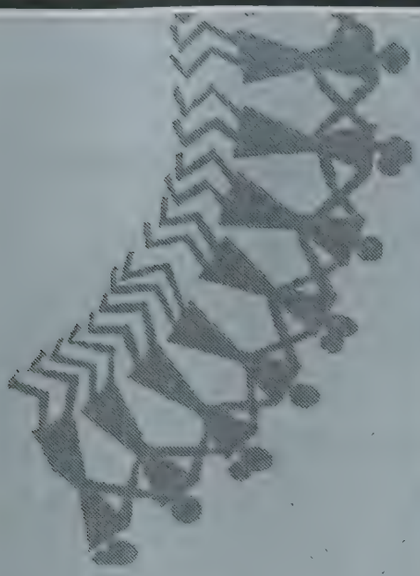
## III. Project Assignment

1. Choose any two components of your interest and make a fresh and complete DHAP for the same for your district without referring to your earlier project assignments. Now compare with the earlier plan if you had made one in an earlier lesson. Are there any differences between the two? What and why?



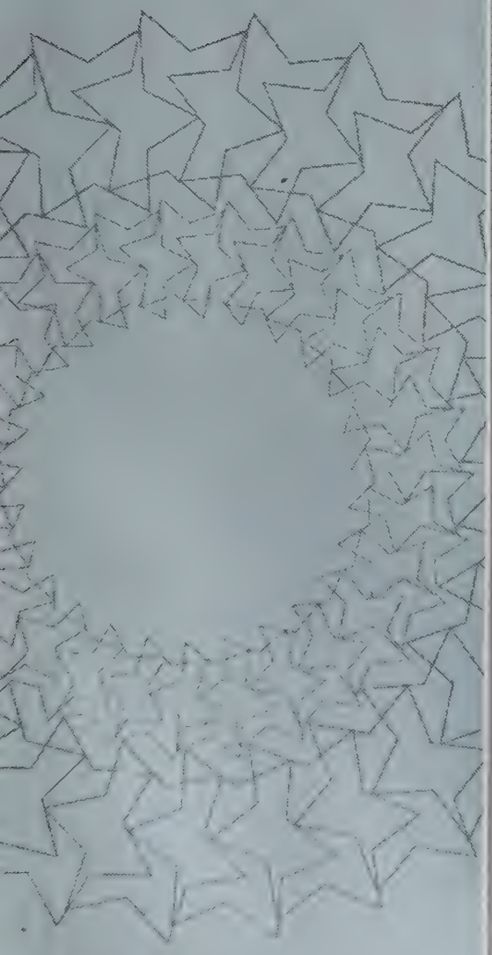
# Lesson FOUR

## Logical Frameworks and the District Plan



### In this lesson we shall discuss:

- What a logical framework is, and what are its objectives
- How to construct a logical framework.
- How to use a logical framework.
- Cautions related to logical frameworks.



## WHAT IS A LOG FRAME?

A logical framework, or log frame, is a tool for planning and monitoring the progress of the programme. It is a brief structured form of expressing the entire set of activities and outputs expected so as to be able to implement and monitor the plan. (Logical implies the logic of a project.)

The logical framework is a tool:

1. To ensure that planning is result oriented and outcomes are evidence based.
2. To ensure that various investments of efforts and resources lead to the desired results.
3. To be able to monitor progress of the programme, evaluate the programme in terms of various process elements and relate it to inputs, outputs and outcomes so as to manage programme more effectively.
4. To be able to make changes in the plan to reach the objectives as part of a result based management approach.

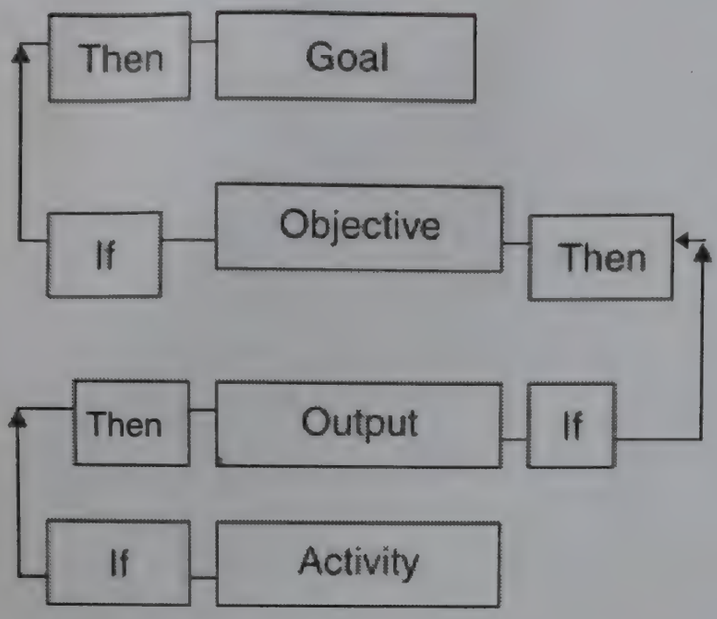
Other Benefits of logical framework:

- All the key components of a project are brought together in one place.
- It presents the components of the project in a systematic and coherent way.
- It identifies the main factors of the projects that are related to its success.
- It is convenient for bringing together multidisciplinary inputs for project preparation and supervision into a common framework.

## CONSTRUCTING A LOGICAL FRAMEWORK

This is best done after the district health action plan has been written and after the final draft has been approved. It is also best done by the planning team in a single long sitting. The logical framework has to be brief to be useful; less than a page for every objective is a useful thumb-rule.

First, list the programme objectives and then looking at the activities and strategies listed in the district plan, list the indicators for the corresponding activities and the outputs that logically relate to it.




(*Source:* Handout from University of Leeds, 2004-05)

Put this down in a tabular form as shown below. Decide the indicators on the basis of different types of criteria. Also decide the means of verification. This is just a working sheet – not part of the final document.

In logical frameworks, the indicator is a fixed reference point which helps us to judge what action is necessary. Outcome indicators express the standard of achievement expected at the end of the project. Outputs and activity level indicators state the standard at different point in time like 'at the end of one year' or 'at the end of two years'.

Here the illustration shows the programme objective, criterion, activity indicator, output indicator and impact indicator: In practice it is too cumbersome to use different critieria for each objective and therefore it should be used mainly for equity concerns. Other criteria used are efficiency criteria –like cost per case, criteria of community participation etc.

Once this is done, this can be re-written in the form of a matrix. There are many different matrix formats in use – each slightly different from the other.

| Programme objective | Criterion | Activity indicator | Output indicator Indicator | Outcome/Impact |
|---|---|---|---|---|
| Skilled Birth assistance to lead to decrease in maternal mortality. | Effectiveness | Number of ANMs trained for SBA. Number of supportive visits made during delivery per supervisor to assist and train on the job. | Number of trained ANMs who do independent skilled birth assistance after training > 2 per ANM per month at least. | % of women delivered by skilled birth attendants. |
| Skilled Birth assistance in villages | Equity | Incentives paid for achieving skilled birth assistance targets in SC populations, BCC in SC hamlets to promote use of SBA services. | Number of dalit SC population where SBA services provided. Number of women who have knowledge of reasons for choosing SBA | % of women delivered by skilled birth attendants in SC population. |

## LOGICAL FRAMEWORK MATRIX

This has four columns:

1. **Goals, Objectives/Outcomes, Outputs, Activities**

2. **OVI (Objectively Verifiable Indicator):** This gives emphasis on the value rather than indicators of achievement. The indicator should be susceptible to measurement.

3. **MVI (Means of Verification Indicator):** It is the source from where the information comes. It verifies the availability and reliability of the data.

4. **Assumptions:** Here all the important assumptions upon which the success of the project is dependent are recorded and also the risks that are involved in the project.

An example of a logical framework:

| Goal | OVI | MVI | Assumption |
|---|---|---|---|
| Reduction of prevalence of TB | TB prevalence rate | HMIS surveillance | |
| **Purpose (objective)**<br>Strengthening capacity of CHWs in prevention and care of TB | Skilled community health worker | ★ Supervision and performance appraisal<br>★ Reports and test result | |
| **Output**<br>1.Trained CHWs in TB prevention and care<br>2. Enough resources for TB prevention and care available<br>3. Continued support and education of CHEs | ★ Test results<br>★ No. of CHWs trained<br>★ Drug stock<br>★ CHWs supervised | ★ Pre and Post test<br>★ Training result<br>★ Inventory<br>★ Supervision report | ★ Funds revised regularly<br>★ Resource persons available<br>★ willingness of CHW<br>★ Political support for CHW programme<br>★ Dropouts of CHWs limited<br>★ Timely delivery of resources |
| **Activities**<br>★ Developing training materials<br>★ Training of trainers<br>★ Conducting training for CHWs<br>★ TB kits<br>★ Provision of Cycles to CHWs<br>★ Conducting monitoring | ★ Types and No. of training materials<br>★ No. of TOT trained<br>★ No. of CHWs recruited<br>★ No. of IEC materials<br>★ No. of drug kits<br>★ Timeliness and completeness of reporting | ★ Presence of materials<br>★ Attendance register<br>★ Recruitment records<br>★ Stock register<br>★ Report forms | ★ Expertise<br>★ Availability of people to be trained<br>★ Timely availability of funds<br>★ Transport availability<br>★ Drug available<br>★ Cooperation of CHW |

## USING A LOGICAL FRAMEWORK

**This logical framework may be used to:**

- Define the tasks of the monitoring and evaluation team.
- Define the progress reports to be submitted by various officers allotted different tasks as well as the officers in charge of the DPMU (district programme management unit)
- Form the basis of interim and end-term evaluation.
- Negotiate for funding with the source of funding and for approval of alterations in approved funding patterns.

**Unless senior officers use this log frame to monitor the programme, the log frame would not be of much value and would become another academic exercise.**

**Caution:** The logical framework is a tool. No more, no less. One can manage without it. Or one can use it and not manage to implement the plan. There are many variants to making it. For example, given below is another variant of it that the RCH-II programme has advocated.

The point is that it is not such a difficult thing after all and everyone who can implement a programme and a lot of people who have never implemented a programme in their lives can make one quite easily. There is no 'correct version' of making a log frame. It is merely that planners or more often funders introduce a particular standard format because they are more familiar with it. If we do not understand it and the whole process is mystified as a technique requiring a highly paid consultant, then it can be quite an impediment. If we understand the principles we can use it to make a good plan and adapt our format to meet the funders' needs. The logical framework can then be used skilfully to convince funding agencies of the districts priorities.

| Objective | Object/output | Object/Output Indicators | Activities/input | Activity OVI and MOVs |
|---|---|---|---|---|
| 1.Strengthen the decentralised | 1.1 Prioritise RCH interventions based on local needs<br><br>1.2 Strengthen capacity for decentralised planning including | 1. Identify priority districts through analysis of RHS data<br><br>**No. districts identified based on RCH outcomes**<br><br>2. In 25% priority districts and 25% of the | 1. Establish planning cell at the'state by May 2004 to prepare the RCH plan.<br><br>2. Planning cell completes the analysis of RHS data and identifies the priority districts<br><br>3. Local needs | Planning cell established and operational<br><br>***Report on establishment of planning cell***<br><br>Districts identified as priority districts within the state |

## SUMMARY

The logical framework enables result-based management or performance management which is a shift beyond the traditional approach which limits programme management to certain operational concerns – expenditure management, and provision of inputs. Such techniques that seek to improve effectiveness of planning also aim for a longer term result – both in outcomes and in the impact which is important for the lives of people, communities, institutions and country as a whole.

A logical framework is a tool:

- For deciding what to do.
- For remembering what to do.
- For checking what has been done.

## FURTHER READING


1. Dale R. (2004). *Developing Planning: Concepts and Tools for Planners, Managers and Facilitators*, Zed Books. London.
2. Gosling L. and Edwards M. (2001): *Toolkits: A Practical Guide to Assessment, Monitoring, Review and Evaluation, Developing Manual 5.*, Save the Children, London.
3. Murray C.J.L. and D.B. Evans (2003): *Health System Performance Assessment: Debates, Methods and Empricisms*, World Health Organisation, Geneva.
4. Ovretveit J. (1998): *Evaluating Health Intervention Buckingham*, Open University Press.
5. Rosenberg H. (1999). 'How to do (or not to do) A Logical Framework' *Health Policy and Planning*, Vol.14.
6. Bond Guidelines Notes, Series 1: *Beginner's Guide to Logical Framework*, http://www.bond.org.uk/word/guidance/logical-fa.doc


### I. Review Questions

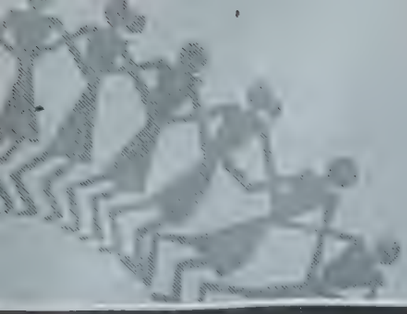
1. What is a logical framework?
2. What are OVIs and MOVs?
3. What are the steps in making a logical framework matrix?
4. How is this exercise more useful than the previously used ways of monitoring programmes?

### II. Application Questions

Make a logical framework matrix diagram for the ASHA programme. Make different variants specifying the sort of purpose you are making it for. How would it differ if it is for raising resources from USAID, from UNICEF or UNFPA or UNDP? How would it be written if it is for monitoring the programme to achieve your district plan objectives?

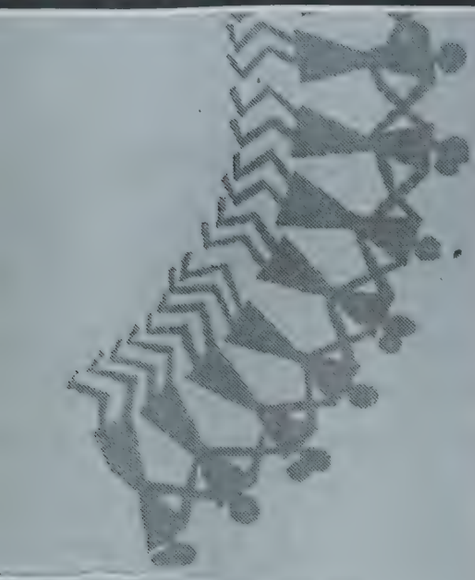
### III. Assignment

Convert the district plan of your district into a log frame for assisting the programme managers monitor the programme and explain it to the district Panchayat head. Briefly report on the experience.



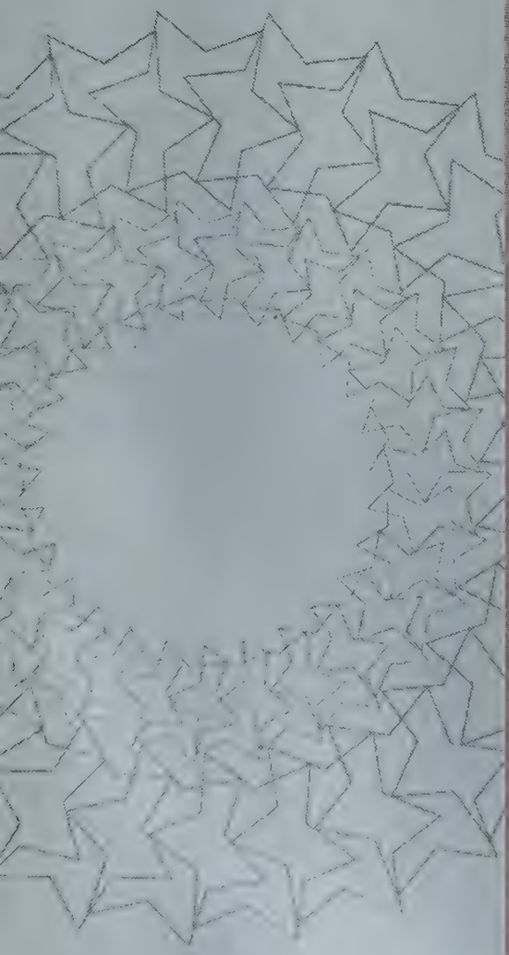
# Lesson FIVE

## Monitoring and Evaluation



### In this lesson we shall discuss:

- What monitoring and evaluation are and why they are needed.
- Importance of monitoring.
- Processes of monitoring.
- Types of evaluation.
- Bottlenecks to effective monitoring.



## INTRODUCTION

Monitoring and evaluation (M&E) are essential components of good programme management at all levels- state, district, block and sector. Monitoring and evaluation are essential to improving the effectiveness of health service delivery. These processes cover assessment of programme inputs, activities, outputs, outcomes, and impacts. Together, these activities help answer key questions about any programmes and policies, and also help assess progress, improve programming, and plan for future programme needs.

We need to differentiate monitoring from evaluation.

## WHAT ARE MONITORING AND EVALUATION?

Although the term monitoring and evaluation tends to get run together as though they are one thing, monitoring and evaluation are, in fact, two distinct sets of departmental activities which are related but not identical.

### Monitoring

- Is the systematic collection and analysis of information as a project progresses,
- Is aimed at improving the efficiency and effectiveness of a project or department,
- Is based on targets set and activities planned during the planning phases of work,
- Assesses the progress on a day-to-day basis and thus helps to keep the work on track, and can let the management know when things are going wrong,
- Helps management determine whether the resources available are sufficient and are being well used, whether the capacity available is sufficient and appropriate, and whether the programme is doing what was planned,
- Provides a useful base for evaluation.

### Evaluation

- Is the comparison of actual project impacts against the agreed strategic plans. It looks at what you set out to do, what you have accomplished, and how you accomplished it.
- Can be **formative**, with the intention of improving the strategy or way of functioning of the health services; also called concurrent evaluation,
- Can also be **summative,** drawing learning's from a completed programme,

Monitoring and Evaluation are geared towards learning from what you are doing and how you are doing it, by focusing on:

- Efficiency
- Effectiveness
- Impact

**Efficiency** tells you that the input into the work is appropriate in terms of the output. This could be input in terms of money, time, staff, equipment and so on.

**Effectiveness** is a measure of the extent to which a development programmes or project achieves the specific objectives it set. If, for example, we set out to improve the skills of birth attendants in a particular area, did we succeed?

**Impact** tells you whether or not the specific objectives you addressed made any difference to the main goals you were trying to address. In other words, was your strategy useful? Did ensuring that ANMs were better skilled improve the institutional delivery rate in the PHCs? And did this, in turn, lead to reduced maternal deaths? Before you decide to expand or to replicate the project elsewhere, you need to be sure that what you are doing makes sense in terms of the impact you want to achieve.

### WHY ARE MONITORING AND EVALUATION NEEDED?

Monitoring and evaluation enable you to check the implementation of service activities

Through monitoring and evaluation, you can:

- Reviews progress: *is the work planned happening as per plan and as per the time schedule?*
- Identify problems in planning and/or implementation: *if it is not happening what is the problem?*
- Make adjustments so that you are more likely to make a difference: *has a system of responding to the monitoring report?*

Evaluation answers these questions:

- *Are we doing the right things?*
- *Are we doing them in the most effective way?*
- *Are we doing them on a scale that makes a measurable difference?*

In the health system, monitoring and evaluation is something that is seen as a superior's requirement rather than a management tool. For example the Government of India monitors the State Government. They are certainly entitled to know whether the fund disbursed to the districts and to the blocks is being properly spent, and whether it is being well spent. Similarly, we can say that the state government monitors the districts' performance or that the funding agency is monitoring the progress of the programme. Monitoring may certainly serve as something done by a superior authority to ensure accountability but this is not the main purpose of monitoring.

The most important use of monitoring and evaluation should be for the department itself to see how it is doing against its objectives, whether it is having an impact, whether it is working efficiently, and to learn how to do it better. Indeed, internal monitoring may be far more useful than external monitoring where this purpose is concerned and should always be built into programme. Plans are essential but they are not set in concrete (totally fixed). If they are not working, or if the circumstances change, then plans need to change too. Getting something wrong is not a crime. But failing to learn from past mistakes because you are not monitoring and evaluating, is.

However, it is important to recognise that monitoring and evaluation are not magic wands that can be waved to make problems disappear, or to cure them, or to miraculously make changes without a lot of hard work being put in by the project or department. In themselves, they are not a solution, but they are valuable tools.

## THE PROCESS OF MONITORING

Monitoring is an internal function in any project or Department. It occurs at every stage. Monitoring involves:

- Establishing indicators of efficiency, effectiveness and impact;
- Setting up systems to collect information relating to these indicators;
- Collecting and recording and conveying the information;
- Analysing the information;
- Using the information in day-to-day management to trigger action.

A monitoring plan has to state the following:

1. Defining what are the indicators of efficiency, effectiveness and impact - of outputs, outcomes and impact.
2. Getting the base line done. It may be better done during the planning stage. Or if the systems were not already in place the first set of information would act as the base line.
3. Defining what information to collect, which has two aspects:
   a. what indicators to use, and
   b. where to get the data from.
4. Information collection and analysis, which may be seen as acting at three levels:
   a. Level 1
      i. Deciding on the persons who will provide/collect the information;
      ii. Deciding on the persons to whom they will provide information (immediate supervisors).
   b. Level 2
      i. Decide what analysis / information processing would take place at the supervisor level;
      ii. What action would be triggered at that level;
      iii. What information would be passed on to the next higher level (the middle manager level).
   c. Level 3
      i. Deciding on the middle level managers to whom the immediate supervisors pass on the information;

**POSSIBLE SOURCES OF INFORMATION FOR A MONITORING PLAN**

- Reports, minutes, attendance registers, financial statements, that are part of your work anyway, as a source of monitoring and evaluation information.
- Special tools that are simple but useful to add to the basic information collected in the natural course of your work. Some of the more common ones are:
  - Case studies
  - Recorded observation
  - Diaries
  - Recording and analysis of important incidents
  - Structured questionnaires
  - One-on-one interviews
  - Focus groups
  - Sample surveys
  - Systematic review of relevant official statistics.

ii. What action they would need to take on it;
iii. What information they would pass on to the Programme Manager;
iv. Also what action the programme manager would take.

5. Deciding the frequency of collection of information at each level.
6. Recording/documenting the reports at each level and what action was taken in response.

Deciding on indicators has been addressed in some detail in the earlier lesson. National Programmes, we note, have also standardised a number of indicators. The most common of these are given in Annexure 1.

## OBJECTIVES OF EVALUATION

- Looking at what the project or department intended to achieve. What difference did it want to make? What impact did it want to make?
- Assessing its progress towards what it wanted to achieve, its impact targets.
- Looking at the strategy of the project or department. Did it have a strategy? Was it effective in following its strategy? Did the strategy work? If not, why not?
- Looking at how it worked:
  - Was there an efficient use of resources?
  - What were the opportunity costs of the way it chose to work?
  - How sustainable is the way in which the project or department works?
  - What are the implications for the various stakeholders in the way the department works?

**An evaluation should:**

- Help you identify problems and their causes;
- Suggest possible solutions to problems;
- Raise questions about assumptions and strategy;
- Push you to reflect on where you are going and how you are getting there;
- Provide you with information and insight;
- Encourage you to act on the information and insight;
- Increase the likelihood that you will make a positive development difference

## TYPES OF EVALUATION

1. **Internal Evaluation:** Organised and conducted by the programme management

*Strengths*

- Due to active engagement with the programme, it would have considerable insights and information that external evaluation would not have,

- Considerable ownership over the evaluation outcomes – so that the findings are used,
- Far better understanding of constraints and possibilities – so analysis and recommendations may be practical,
- More affordable, strengthens monitoring systems.

*Limitations*

- Tends to read one's own intuitive insights/bias into the analysis; the subjective bias,
- May be defensive: feel the need to justify themselves.

**2. External Evaluation:** Conducted by an agency/individuals with experience in evaluation studies.

*Strengths*

- Gives a fresh insight free of subjective bias. Has its own bias, but looking at the same programme from a different perspective is useful.
- May identify bottlenecks and causes that internal evaluation had not considered.
- More accountable.

*Limitations*

- Expensive.
- A limited range of issues may be addressed at a time.
- Even where analysis is strong, recommendations may or may not be feasible or be better alternatives.
- Looks at only one set of issues and factors within a large programme – and only as seen at one point of time.

**3. Process Evaluation:** Looks at processes. What extent and with what quality they have been followed as planned?

**4. Outcome Evaluation:** Looks at outcomes. Sees whether the stated programmes outcomes were attained, to what extent.

**5. Programme Evaluation:** Looks at both processes and outcomes. Whether programme outcomes were attained, to what extent and quality and processes fed into outcomes. Inputs are also a part of programme evaluation.

**6. Impact Evaluation:** Looks at the contribution of programme outcomes to over all societal goals or purposes that the programme was addressing.

**7. Concurrent Evaluation; Formative Evaluation**: Organised at repeated points during the course of the programme – so that the ongoing programme is influenced by it. Concurrent evaluation is usually

concurrent external evaluation; if it were internal, it would be considered part of monitoring.

**8. End of the Programme Evaluation:** Organised when the programme is completed so that one can learn from the programme to plan a new phase of the programme; or for planning replication of this programme.

### Quantitative and Qualitative Evaluation

Information used in evaluation can be classified as:

- Quantitative or
- Qualitative.

Quantitative measurement tells you how much or how many. For example, how many people attend immunisation sessions, what percent of children are immunised, how many women were given TT vaccine, how many people had fever, how many Mitanins are there in one village, and so on. Quantitative measurement can be expressed in absolute numbers (124 women in village are affected) or as a percentage (50% of households in the area have electricity). It can also be expressed as a ratio (one doctor for every 30,000 people). One way or another, you get quantitative (number) information by counting or measuring.

Qualitative measurement tells you how people feel about a situation, about how things are done or how people behave. You get qualitative information by asking, observing and interpreting. This may be done by recording discussions and interviews, by observing interrelationships and trying to build possible explanations.

The key tools of qualitative evaluation are:

a) Formal and informal interviews which may be recorded as case studies.
b) Focus group discussions (FGD)
c) Study of reports/ documents/ of the programme
d) Participatory evaluation processes.

Some people find quantitative information comforting. It seems solid and reliable and objective. They find qualitative information unconvincing and subjective. It is a mistake to say that quantitative information speaks for itself. It requires just as much interpretation in order to make it meaningful as does qualitative information. It may be a fact that coverage of routine immunisation in most of the blocks is dropping – counting can tell us that – but it tells us nothing about why this drop is taking place. In order to know that, you would need to go out and ask questions; in other words, to get qualitative information.

The limitation of qualitative information is that it tends to be subjective and requires very good quality evaluators to be able to bring out information and analysis of value. Also one needs to have some understanding of the representativeness of the study – whether the study is an oddity or represents the general trend.

Most evaluation methodologies therefore use a combination of quantitative and qualitative information in order to be comprehensive. For example, we need to know what is the immunisation coverage, as well as why parents or the community or do not send their children for immunisation or participate.

**Evaluation Techniques**

Evaluation for different processes require different techniques that need to be understood.
For example, Training Evaluation, BCC outcomes evaluation, Community Mobilisation/Community participation evaluation; Community Health Workers Evaluation, Client Satisfaction evaluation.

**In Conclusion**

Ideally every programme should have a concurrent and end of the programme internal and external evaluation with a participatory evaluation built into it. In practice most programmes have only a monitoring process running concurrently with an end of the programme evaluation.

## KEY BOTTLENECKS OF MONITORING

The key problems are:

a) Data not reliable: Discordance between external evaluation and regular internal monitoring data:
b) Delayed Reports: Reports do not come in time, leading to lag in cycle of information and response.
c) Delayed Response: Data collected and flows up but not acted on in time.

The reasons behind these three key problems overlap and five basic constraints are discussed below:

1. Authoritarian rather than supportive monitoring:
2. Poor delineation of who does what and when;
3. Poor Logistics of Monitoring: expenses and human resource requirements of transmitting and analysing information
4. Cross-checking systems not being built in: There needs to be some cross-checking of the internal data at every level. It also is very useful to get an external evaluation team to check their findings as part of their external evaluation with the records as available on the internal monitoring system. Thus this acts as an external verification of not only programme outcomes but also the quality of data on the internal monitoring system. This identifies at which point in the flow of data, inaccuracies and false data are creeping in.
5. Levels and purpose of monitoring and not being understood, especially as regards the "supportive" action that needs to be taken.

We discuss these in detail below:

### 1. Supportive Monitoring

When reporting any poor performance leads only to disciplinary action – reports would always be of poo reliability. Thus if an ANM or a sector supervisor or even a district chief medical officer reports poo performance – the immediate response from above is not more resources or more support – but a hostile reaction that only burdens the programme manager further.

In one state, an excellent MIS was put in place as part of a World Bank project that gave an accurate picture of the performance of all CHCs and PHCs. The Chief Minister reviewed it and consequently al the poor performers were hauled up. From the very next cycle, the figures improved and kept improving till optimum levels were reached. That was the end of the use of such a well planned system. Needless to say, the situation on the ground had not changed at all.

The public health system has a simplistic understanding that there are no problems except lack of motivation and willingness to do the work. If there is a weak performance, being strict and taking disciplinary action is the panacea, the solution to all ills. Thus usually monitoring is itself described as strict monitoring, meaning that even this problem has to be managed in this manner – strictly, by authority and by the threat of disciplinary action.

On the other hand the lower staff must feel encouraged to report problems so that they receive more support and problems can actually be overcome to achieve goals. The role of the supervisor is not disciplining, but on the job training and trouble-shooting operational problems and actively assisting the weak performer. This is the idea with which an ANM gets a 6 month special training package before she is made a Health Assistant or, as earlier called, a Lady Health Visitor- a person who visits and assists. Unfortunately an administrative system which does not understand this has reduced them to an extension of their authority, with no skills, especially in male supervisors, for providing any support or training.

> *The role of the supervisor is not disciplining, but on the job training and trouble-shooting operational problems and actively assisting the weak performer... Staff must feel encouraged to report problems so that they receive more support and problems can actually be overcome to achieve goals.*

The idiom of the health workforce as an army with the top bureaucrat as its commander is particularly inappropriate and breeds this same notion of supervision as control and authority. This is difficult to change but we can start by:

a. Re-training supervisory staff to build their capabilities and to change the nature of supervision.
b. Denoting and referring to the persons at the block level as a team.
c. Offering rewards for good performance.
d. Whenever a weak report is obtained, asking for a brief analysis of causes.
e. Planning a supportive action and building indicators to monitor these processes. A planned period of support or specific supportive management action is a must for a weak report.
f. Specifically asking senior officers to abstain from saying "I do not know how you shall do it – but these results must improve."

## 2. Delineation of Who Does What and When

It is important to make a monitoring plan for each level which defines who does what and with what periodicity. The Monitoring Plan in the state programme implementation plan else only the log frame is what the external funding agency or the state programme managers will monitor. Clear plans are therefore needed at the district, block and sector level .

Given below is an example of such a plan:

| User of the information (Who) | Action based on information (Why) | What indicator (What) | Data source (Inclusive of from Whom) | How many times information is reviewed (When) |
|---|---|---|---|---|
| Health facility/Block programme manager | Improve quality of services and outreach | • Percentage of children 0-23 months seen for any reason and were weighed and recorded<br>• % of pregnant women who come for institutional delivery.<br>• Bed Occupancy rate in CHC | • Facility Register<br>• Child clinic register<br>• Health facility survey<br>• Supervision report | • Monthly Report,<br>• Yearly review of reports and register sheets |
| | Strengthen community base for supporting facility | • % of community health workers trained<br>• % of children seen by CHW for diarrhoea or ARI or newborn with low birth weights who were referred<br>• % of malnourished children for whom referral/counseling as appropriate was taken | • Participatory community assessment.<br>• Sample survey | Yearly |
| | Remedying supply problem | • Amt. of IFA in stock<br>• No. of other key fast-moving drugs in stock on the day of visit | Inventory report | Monthly |
| District Manager | • Detects problem in quality of monitoring and management in block level.and find solution for problems | Indicator of underweight/ wasting/stunting<br>Indicator of coverage<br>Indicator of service quality | Household survey<br>Clinic report<br>Health facility survey | Household survey in 2-3 years<br>Health facility survey in 1-2 years<br>Review of clinic |

Such a monitoring plan is useful as part of a district level plan. At least at the beginning of the year, a plan made on the above model can be finalised and circulated to all the functionaries.

### 3. Logistics of Monitoring

Often monitoring flounders because there is insufficient travel support to make visits to the villages. Sometimes there are geographical problems- lack of roads, rivers in the way, forests etc. that make frequent visits for support and supervision difficult. One can easily estimate average distances per day per block that a supervisor would have to travel and then estimate the costs of this travel and finally the number of days that the supervisor can spend on such travel to estimate travel support costs of monitoring.

There are also costs involved in human resource at the block level for monitoring the programme. The costs are of analysing information and presenting the gist to the programme manager as well as sending a selection of it upwards.

There is also a general principle – that only the information needed for triggering action at a particular level needs to be transmitted upwards. Thus at each level a certain amount of information gets filtered out. The entire information may get sent up once a year. For regular monthly, or daily reporting, the system has to use very limited number of indicators – like one or two indicators at best for a specific programme.

The advent of computerisation has made data analysis and display much easier and with web based networking and wireless communication expanding fast- it would be soon possible to make flow of information much faster and reduce time delays in sending information

### 4. Cross-checking and Improving Reliability of Reporting

**Testing and improving the reliability of data is one major challenge.** In most states the state immunisation officer receives a 100% immunisation report – or at least one which is widely at odds with the reality. The external report may even give a figure which is about 50 to 60%. So he knows someone or all are giving false reports. But he has no way of knowing who is lying. He hauls up the officer reporting the lowest figure- but he may just be punishing the person who is the most truthful. If the state officer or district officer does do a cross-check and find a gap – the district or block officer may just state that it is a stray example and not the usual pattern. So how does the state or district officer find out the truth. And much more important, how does he build a system that gives reports of such reliability that they can be acted upon.

a) Choose a set of indicators – other than direct programme outcome indicators – that would help monitor the health of the system as a whole. Thus there should be some process indicators and

some outcome indicators, a mismatch between which is indicative of unreliability – (like the use of ABER and API together in malaria surveillance.)

b) Require that everyone entrusted at oversight at the three levels- immediate supervisor, block office, district office each do a sample survey to validate a fixed percentage of the results submitted by a clearly defined technique and a pre-fixed frequency using a standardised questionnaire. It is the 'truth content'of the reports that would be checked and acted on. If the reports conform to the situation on the ground – however poor it is – it does not attract disciplinary action. But if it does – then action should be prompt. Thus cross-checking is not only to find out the position of the programme on the ground, but the quality of monitoring. Also by finding the variance between the sample report and the collected reports one can estimate actual achievements as compared to reported achievements.

c) Hire an external team to validate a set of monitoring reports that district, block and immediate supervisor have submitted. This requires checking the same sample as the supervisors have used. This then becomes a monitoring of monitoring and leads to strengthening the system of monitoring rather than acting as an independent cross-check. This system of embedding external into internal evaluation is a well known technique of evaluation of large systems.

d) To be able to do this the recording of information and the flow of information should be as per laid down procedure and this is something that can be entrusted to an external agency or would be the main task of the monitoring cell of the programme management unit.

## 5. Responding to the Report: Supportively

As discussed above, one of the most difficult aspects of the monitoring tasks is being able to initiate an adequate supportive response to problems which are reported. People must have reason to report at all. If the figures are sent up and nothing is ever heard of them again- then the reports would lose quality, get delayed and soon altogether stop. If response is always disciplinary then they get falsified.

We can appeal to managers to ensure that reports are responded to. We can also create some clear protocols of what needs to be done if indicator trends behave in a certain way. And then ensure that these protocols are followed.

**CASE STUDY**

In the NATHI disease surveillance system in Vellore district of Tamil Nadu, there is a system where a number of doctors – both in government and in private sector are recruited to play the part of sentinel surveillance units. They are given a list of seven diseases and asked to fill in a postcard with a printed form and post it if they see any disease.

If anyone reports a disease, the person sending the report is sent a letter of thanks and if possible some note on what action was taken on it. Often they also receive a visit from the response team. What the action team has to do for each report is made clear in a list of instructions. Also the post card lists a number of diseases some of which are expected to decrease and some of which are not expected to decrease. Now if reports show a decrease in both kinds of diseases, then the most likely reason is that interest in reporting has come down and that calls for support activities with the reporter. If only the index disease comes down while the control disease remains steady, then we know that the disease incidence is coming down.

How applicable is this to monitoring programme activities? Let us take another hypothetical case:

If there is a report received for the month that shows that institutional delivery has decreased by half since the previous month in a particular CHC, the district officer would promptly ring up the officer to find out why.

1. If it was due to some correctable or transient causes- just encourage him or her and help in the correction. If it is a minor or transient problem one could leave it at that (for example, nurse or doctor had been on leave; expected seasonal fluctuation, etc.). But if the problem will take some time and effort to solve, file a report, so that it could be followed up. (Cases reported by ASHA not being seen, JSY payments had not been made, poor quality on interaction between staff and patients etc.)
2. If it was due to some unavoidable and un-remediable causes or cause is unknown- make a visit, form an assessment and then also take it to the superiors and discuss it to find a way out. We may find that many problems posed as an impossible problem actually admit of a solution. A report is filed on this and copy is sent to the person reporting.
3. If the report shows that there has been no institutional deliveries at all or if the levels are stagnant at unacceptably low levels, this problem requires a much more thorough study and a small action plan to correct it. (Nurses require training, delivery room needs to be built, BCC plan needs to be made etc.) This really should have been picked up during district planning and the work plan should already have been implemented. However if it was not, it could be included now.

This is a general protocol by which the programme officer can specify what needs to be done for each problem. And note that one is talking of supportive action.

Thus if immunisation reports show poor progress in a given area, a similar protocol can be devised for corrective action and then one can monitor to see whether such action took place.

The details can be worked out for each context. It is the principle that is important – "if there is not enough visible and prompt response to what the monitoring reports indicate– and if they are not largely supportive- then monitoring would not be effective." This includes rewards for good performance- even a phone call from the secretary appreciating the achievement.

"I just rang you up to tell you, that I appreciate the achievement your district/block has made in bringing down API in malaria to below 2."

## I. Review Questions

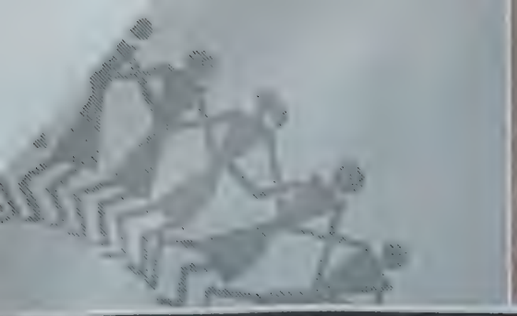
1. Are monitoring, evaluation and supervision the same activity? Explain where they overlap and where they differ.
2. What are the common problems being encountered in effective monitoring?
3. How does one improve the reliability of monitoring?

## II. Application Questions

1. Most analyses of monitoring always report as if the person collecting data is bluffing- or the person who delays in sending it up is negligent. In this presentation the problem seems to be identified at the level of those receiving the reports – how they perceive and play their roles. If you are a middle level programme manager it means that you are the problem why bad data reaches you, and your boss is the problem as to why poor or delayed reports reach them. Would you agree?
2. What can be done to change the attitudes of the staff, particularly on monitoring?

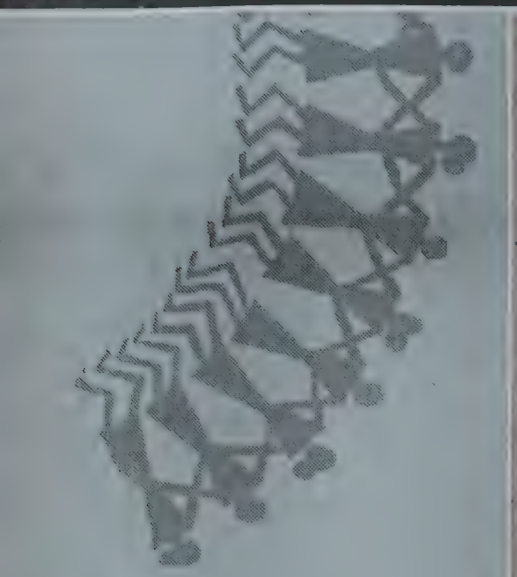
## III. Project Questions

1. Examine the district monitoring plan for immunisation (or as part of integrated monitoring strategy) and comment on whether and how it needs revision so that internal MIS figures tally with what is provided from the external surveys. (Note that RCH Key Indicators Survey is the latest survey.)
2. Write out a monitoring strategy that has two components addressing the bottlenecks in monitoring that the district is currently facing.



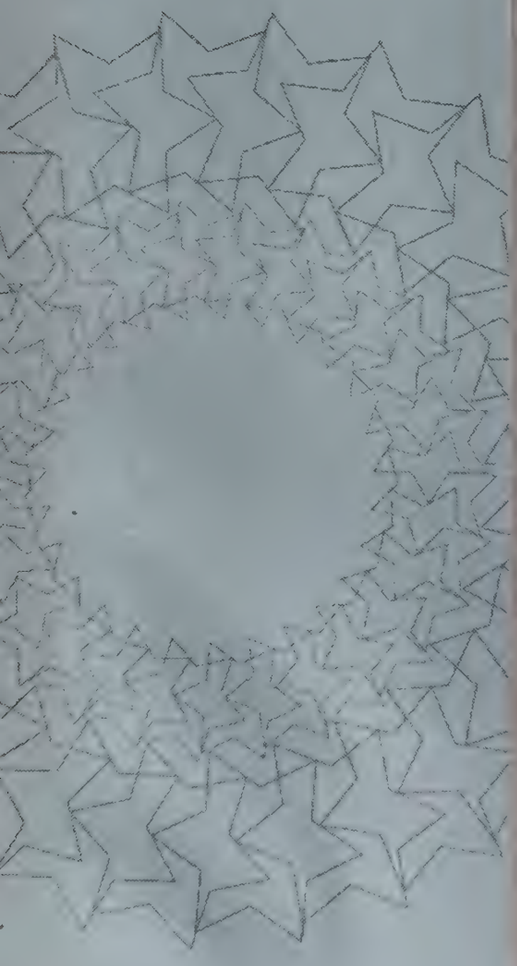
# Lesson SIX

## Costing, Budgeting and Programme Management



### In this lesson we shall discuss:

- the importance of costing programmes properly.
- steps in budgeting for a programme.
- what financial management is.
- organising programme management at the district level.



## COSTS AND THEIR USES

Costs represent the resources required in a particular situation to carry out an activity. Costs are usually expressed in monetary terms. In health planning, costing is needed at three stages:

1. In appraisal of options
2. In budgeting.
3. In evaluation.

### Economic Appraisal Techniques

This sets the framework for comparing the costs used in a particular intervention with the expected benefits resulting from them. The projects with the best ratios for these are the most desirable.

The two most common approaches are a cost benefit analysis or a cost effectiveness analysis.

In cost effectiveness analysis we would like to know what the costs involved are in choosing option A and option B for a specific benefit to be achieved, and then decide which of these to choose.

In cost benefit analysis we have only one option but we want to know the benefit that is gained for the expenditure made. If this benefit seems substantial for spending so much money then one takes that decision. It becomes a problem to compare two dissimilar benefits. Is it more effective to remove blindness in a large number of elderly people or save a few child deaths for a similar expenditure? No one can give an answer to this just like that. To be able to compare benefits, a unit called Disability Adjusted Life Years (DALYs) was created and all cost benefits reduced to a "DALYs saved per dollar spent" However this approach has been criticised and anyway is a difficult concept to use at the district level. Also many actions cannot be costed (like saving a life) and there are many problems in the best of such studies.

Costing studies are also used in appraisal and evaluation of programmes for one wants to know whether this was money well spent. How much money was spent to reach the benefit that the programme has achieved?

Costs need not be the same as prices for terms of financial planning and for evaluation. But for budgeting they would need to be. Some actions like saving a life cannot be costed easily.

There is also a need in such studies to look at all costs – costs that the health service incurs and costs that the family incurs. Health service costs for example are in the form of drugs or personnel. Costs that the family faces are fees, transport costs both for the patient and the escort and their time away from home or work. There are also therefore costs that an individual's employer or family faces in covering her absence.

Another concept in use is 'opportunity cost', i.e. the costs of alternative actions (by implication, the nex best) that could have occurred if one had not gone ahead with the chosen action. For example the cost o training one doctor may be equivalent to the cost of training five nurses.

This lesson does not deal with costing for programme planning or for evaluation. We would limit ourselves to the more mundane but essential activity of drawing up a budget.

## Budgeting

This is the process of drawing up the resources that would be used up in doing a programme, usually in monetary terms. The purpose is to plan for expenditure and to raise the necessary resources before the start of the programme.

### STEPS IN BUDGETING

1. Identify the activity being costed and its purpose.
2. Identify all resources used in carrying out the project, and whether they are capital or recurrent by the year.
3. Translate the resources in terms of money.
4. Add contingency.
5. Add institutional overheads if needed.
6. Adjust for inflation.
7. Ensure allocative priorities- equity and regional considerations.
8. Finalising the spending plan. (plan for expenditure – when to spend on what)

## Identifying Activities

The link is with the activities page of the project implementation plan. For every "activity" proposed there must be a corresponding line in the budget. One can also cross-check to see whether for every budget line the activity details have been made clear in the text.

Once the main activity is identified the supporting activities also need to be identified and costed. Examples of supporting activity are the preparatory work that goes into initiating it, the costs of monitoring the activity, of documenting it etc.

Thus if we are costing skilled birth attendant training for ANMs other than the costs of training the ANMs, we have to cost the preparation of training material, the planning workshop, the cost of training of trainers, of evaluating each training session etc.

Or if we are doing a BCC programme through NGOs we need to factor in the costs of selecting the NGOs and training them before they can start work and monitoring to see whether they are performing their work as expected. Often supporting activities do not happen at all because they are not budgeted for.

## Identifying the Resources

An activity requires a consumption of resources under a number of heads, the most important being staff

or workforce time. Others are consumables costs, transport costs, costs of training and publicity etc. If there are voluntary contributions, even these need to be attributed a notional cost and brought into the budgetary statement.

Some of the resources are capital assets like the building, a vehicle or major equipment. If a new building is to be built it is largely a one-time expenditure. Others are recurrent costs - like the maintenance cost of a building or equipment or vehicle, the workforce time or the consumables. Note that almost all capital costs have a recurrent component.

## Converting it into Money

To do this we need to decide unit costs and determine quantities. There could be more than one type of quantity.

Thus, for training SBAs, if it takes Rs 200 for food and accommodation for one person then we need to know number of days of training and number of persons to be trained under 'quantities'. The product of these three is the cost of training without the support activities.

We can also look at the fixed cost and variable cost in an activity. Thus, as quantities increase, the fixed cost would remain the same – but the variable cost would increase.

In practical terms the best way to do these calculations is the use of a spreadsheet software. Microsoft's Excel is the most commonly in use- but there are many alternatives.

The advantage of this is that we can feed for each budget line corresponding items of activity, unit costs and quantity. Once this is done the totals are all calculated and displayed.

Often, since resources are constrained, the total budget is constrained. Often budgets have to be tailored to the availability of resources. This can be done by altering either unit costs (if required to improve quality), or quantities.

This also helps in budgetary allocations between activities and between levels of health care since sub-total budgets can be displayed.

## Adding in Contingency

There are always some expenses that cannot be anticipated or the sums are too small and irregular in occurrence to quantifying the main budget. Thus a sum of money needs to be kept aside for these expenditures and this sum is called the contingency amount. Some would allow up to 20% for contingency whereas other programmes would hesitate to provide for contingencies beyond 5 or 6%.

## Institutional Overheads

We may also add a fixed sum for institutional over heads or professional fees when we are outsourcing a task. It is important to include this in NGO programmes. This is different from sanctioning programme administration costs. This is not the expenditure on programme administration. It is what goes into maintaining the institution in between projects as also to cover invisible costs that an institution takes on – like use of its office space or vehicles, or contributions by its staff who are not paid under the project etc.

If this is not granted in a transparent manner, most NGOs or outsourced agencies would be obliged to utilise this sum of money anyway from the project. This leads to loss of transparency and exposes good organisations also equally to a threat. If not granted it gives less scrupulous organisations a greater chance of survival. Many funding agencies may not be willing to consider such overheads, especially for NGOs – who need this the most.

## Adjusting for Inflation

When a budget is made for a five year project or even a three year project, the increase in costs due to inflation needs to be factored in. Workforce would require salary increments and supplies would cost more.

A few sample budgets in the annexure.

## Ensuring Allocative Priorities are Met

When the budget is done we need to re-check whether allocation between different components and regions are as per desirable norms. Thus we may want to ensure that about 5 % is for BCC activities and that more than 35% is not spent on infrastructure and that programme administration costs – salaries of managerial persons does not exceed 6% etc.

There may be a decision that at least 50% of funds are to be spent on issues relating directly or indirectly to women's health or that at least 25% of funds should go to tribal areas etc. These are allocative norms related to health equity.

These norms may be fixed by the source of funding or may be a local district level decision. It is desirable for the district to evolve such norms. The budget has now to be adjusted to meet these criteria. In a state plan it is desirable to make the budget allotted to each district and what would be spent at the state level visible in a separate table.

## Casting the Spending Plan

Once the final budget is arrived at, the budget has to be also presented in accordance with expected expenditure in each month – or much more practically for each quarterly or three month period. This is critical to programme management.

The best way to do this is to use the spreadsheet to calculate expenditure in each month for each activity. Then add them up and present them as quarterly expected expenditure patterns. Usually budget summaries are what are looked at and what are presented. But it is important for those planning to keep the calculation sheets since they would be of immense help in financial management of the programme.

The NRHM has provided a qualified chartered accountant as finance manager for every State precisely so that such planning can be done and so that he can support such planning at the state and, with the district accounts manager, at the district level. If they are not used for this and instead given accounting work or even worse errands to run -someone should file a PIL for misappropriation of funds.

### Financial Management

There are two distinct roles in this. One is simply to disburse the money efficiently, ensure that the bills and vouchers are duly submitted, keep accounts accurately, and submit the utilisation certificates and audited statements on time. This is an accounting function. Though stated so simply, many projects break down on the failure of the accounting section to carry this out effectively.

The other and more challenging part of financial management is to use it as a tool of programme management. Here one has to match physical achievement as expressed in the work schedules with financial expenditure patterns. Then use this for two purposes – firstly to ensure there is no cash flow problem interrupting the programme at any point and secondly to see whether the programme is being well run – that is to judge by financial flows whether the programme is on schedule and whether for a given rate of expenditure it is achieving what is expected. If it is not doing either, there is a design problem or there is leakage of funds. For effective financial management therefore, the construction of a work schedule linked to expenditure patterns becomes critical.

> *The more challenging part of financial management is to see whether the programme is being well run, i.e. to judge by financial flows whether the programme is on schedule and whether for a given rate of expenditure, it is achieving what is expected.*

## Programme Management

The programme management arrangements are critical in deciding what the outcomes would be.

Till now we have learnt what needs to be done and the resources needed for it. But what about the human resource and the skills needed to do this? This too needs resources but it also needs motivation, leadership, dedication, compassion- which do not appear on the budget line but which are critical to success. This also needs clear allocation of functions and definition of accountability of action. Thus one needs to have a management strategy in place.

The problem with work allocation to individuals is that each area of work soon becomes an individual's turf and others are reluctant to enter it. Thus the District Malaria Officer soon becomes the only person who knows about malaria and he knows little about what is happening in RCH or blindness control.

There is therefore a need to build the district programme management unit as a team of equals led by one officer. Such a team would need to have all the requisite skills as well as a sense of solidarity and pride in achievement. To ensure that such a team leadership becomes available, the district officer in charge should be an officer selected on a seniority cum merit basis and holding a regular appointment, not holding it as 'in charge' at the will and pleasure of the powers that be. Obviously this is an ideal situation- but one can look at what steps can be taken so that such an ideal becomes closer.

a) Decide the number of programme managers from existing staff and their functions.
b) Ensure that there are persons from different cadre in the district team – especially one from the nursing cadre and from male supervisory cadre.
c) Decide the skills that need to brought in from the outside and choose between three options for doing this:
    i. hiring programme management staff on contractual basis
    ii. hiring an external consultant for some specific tasks
    iii. entering into an MOU with an NGO or technical assistance agency that can perform certain functions.
d) Decide on technical assistance agencies that would support the district.
e) Decide the location or locations of the programme management team/unit.
f) Decide on the infrastructure requirements for such a team to function.
g) Decide on the costs of functioning of the programme team.
h) Clearly state not only work responsibilities but also what financial and managerial powers and support resources would be given to each person on the programme management team.
i) Organise some of the above into a full time district programme management team, which can learn from experience and become trained over the years. It should ideally be made up wholly of

persons who get trained in public health management.

j) Organise, in addition, a District Resource Unit which can be even be done by outsourcing the creation and management of such a unit to a suitable NGO or a technical assistance agency. This is needed for supporting district level planning and decentralised programme implementation. District plans and hospital development plans can be made with external technical assistance but this task is not completed in a single year. Each year the district has to learn from the previous years' experience as well as learn from best practices elsewhere so as to enrich their plan for the next year. It would also need constantly improving quality of managerial support. This requires stable district resource teams, who learn and improve from year to year. It may take the form of district level resource centres which act as the institutional memory of the district planning process and programme implementation as well as to bridge with best practices elsewhere.

> *...A district resource unit may take the form of district level resource centres which act as the institutional memory of the district planning process and programme implementation, as well draw up best practices elsewhere.*

### I. Review Questions

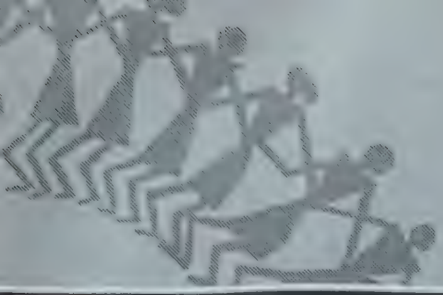
1. What kind of preparatory work needs to be done before laying down the budget for a programme?
2. What are the steps for making a programme budget and what are its various components?
3. What does financial management of a programme mean?
4. What is the importance of having a district level programme management team and what should its structure be?
5. What is the importance of having a district level resource centre?

### II. Application Questions

1. How can a budget reflect processes like participation, decentralisation and positive discrimination?

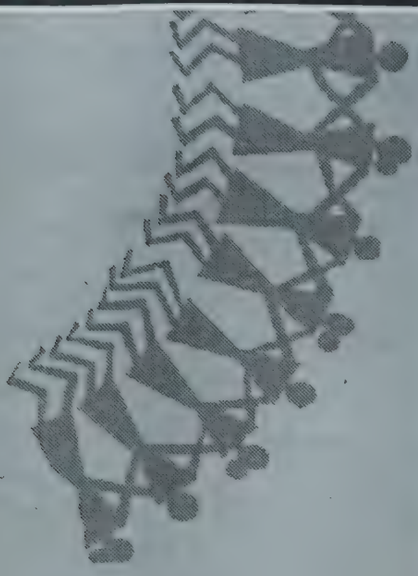
### III. Project Assignment

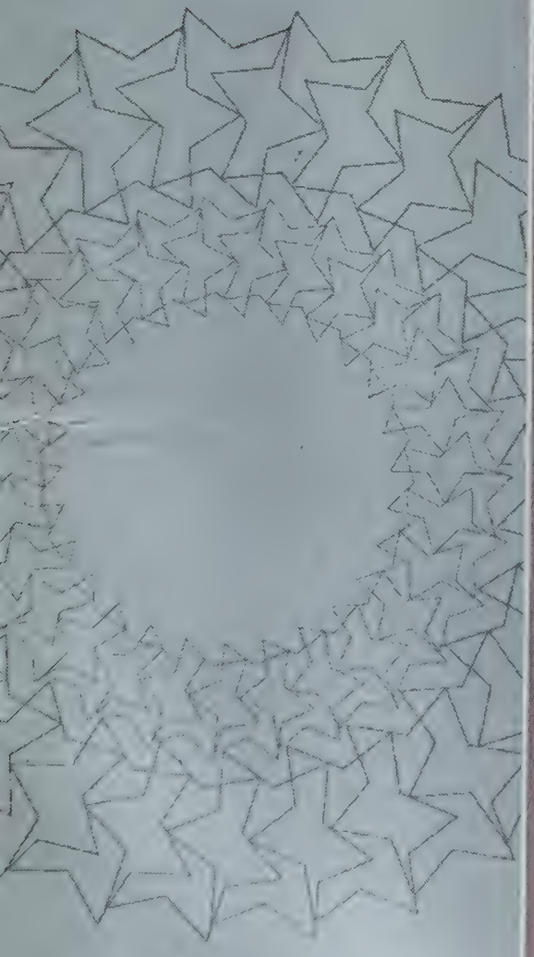
1. Describe the district level management team in your district and analyse its strengths and weaknesses. Prescribe a different structure if you think it is required.
2. Make a budget for a three year programme on the control of any infectious disease prevalent in your area on the basis of a factual problem statement and practical strategy for the same.



# Lesson SEVEN

## Information for Planning





### In this lesson we shall discuss:

- the forms and types of information that is required for planning.
- the quality of information that is needed.
- information sources for health planning and secondary sources frequently used.

## NTRODUCTION

nformation is the lifeblood of the planning process. Both rational planning and "political" choice requires nformation.

What information is collected and made available makes a difference to the planning outcomes. Thus if all data showed the needs of SC/ST sections separately the planning would try to take care of it. If such data is never available there is less likelihood of any separate efforts being made to plan for such sections.

This is true about disease priorities too. For example, information on non-communicable disease or mental health is not collected. If it were collected and available its inclusion in planning becomes much more likely.

Participants in the planning process all have their preconceptions and values which affect where they focus their attention. They may seek to focus more on such issues. The information collected would reflect this.

Planning is also a process of negotiation between different stakeholders. Information is power. A person who claims to know more due to a longer experience or study, gains a better influence over decisions. But a person who can actually provide evidence for her statements and is able to draw on information more accurately and faster has much more leverage in the decision making process.

## FORMS OF INFORMATION

There are two broad forms in which information is used. One is in the form of numerical data which is often analyzed statistically. This is certainly more objective, but invariably this misses out on much of the information. The other form of data is qualitative data which is a record of perceptions of different individuals and groups. Such data is often termed soft data as compared to hard statistical data. Soft data is essential to understand perceptions of people which often give insights far more accurate than hard data. Also such data matters because the public understanding of a health issue and people's support or opposition or depth of commitment or resistance to ideas are all material factors that influence planning.

### FEATURES IN ASSESSING INFORMATION

*Accuracy and Reliability of Information:*
Information provides a means of presenting a view of the real world. Such views can differ due to inaccuracies, but also differ because of genuinely different perceptions.

Usually hard data is taken as less error prone- but we would need to consider the following questions about statistical data:

*How representative is it?*
*How much of the whole picture does an indicator capture?*
*How accurate is the measurement of the indicator?*
*What is the possible range of error?*

**How representative is it?**

Does the information reflect the situation all over or does it have any bias. Thus data from hospitals woul show higher degree of serious cases. It may be more reflective of urban areas simply because they hav better access. Or the sample size may be so small that we are left wondering whether this is really th true situation or just the nature of the sample.
Major data sources like the SRS always present their sample size, their urban –rural distribution and th range of error.

**How much of the whole information does the indicator capture?**

Consider as an example, that maternal mortality rate is a poor indicator of the many problems associate with child birth. It is estimated that as many as 16 times the number of women who die are left wit permanent child birth related health problems. But there is no indicator in use to capture this. Most indicator are thus only the measures of a tip of iceberg. Thus child mortality or neonatal mortality may reflect tip of the iceberg while an indicator like child malnutrition rates may reflect better the over all health of th child. Of course increasing child survival is an objective – but it is only part of the larger goal of improvin child health.

This problem is much more so when it comes to information on service delivery. Quality of care is difficul to capture in numerical terms and some of the data most easily available on service delivery has little t do with quality of care. One has to either look to much more carefully constructed composite indices o use qualitative methods.

**What are the errors that arise at the data collection stage which would affect reliability?**

a) Definitions used: How was the indicator defined. For example the definition of diarrhoea woul make a very big difference to its recorded incidence. Or for example defining a resident of th area, or recording how many community health workers are functional- the definition of functiona CHW is critical to what data is recorded.
b) Sample sizes and biases – advertent or inadvertent – in their selection:
Programmes are designed with a specific sample size in mind and with some techniques fo avoiding biases. How much these are honored while actually collecting data is important. Mos data collection needs close supervision. Thus difficult to reach habitations may get left out in a

immunisation survey and substituted by others that are nearer and this would alter the response considerably.

c) Training and motivation of data collectors:
One needs careful training both before and on the job to ensure adequate quality of data collection. Also not everyone makes a good data collector. Only a certain type of person has the diligence to patiently collect the information and record it.It requires considerable inter-personal skills to be able to elicit truthful and clear answers even to simple questionnaires.

d) Vested interests in reporting the information as high or low.

e) Data collectors and trainers and even programme managers are part of one or other stakeholder group and they may have their strong views. In some cases these views are strong enough to be called a vested interest. Thus a local officer may not want a very poor performance reported from his areas and may be able to influence results. Or data collectors may want to push the findings in one direction.

Most studies and data sources declare their methods in some detail and give the range of possible values – not just one number. Also increasingly we seek confirmation from more than one study to reach a conclusion on outcomes.

Having said this, we need not refine tools and methods of collection in the pursuit of accuracy so far that it becomes too expensive.

### Spatial and Time consideration of Information

When the information was collected and from where are important factors. Any data set must record time (which month and which year) when it was collected for it to be useful. The places from which the data is collected and the geographic distribution is also critical.

### Level of aggregation of information

This is another important dimension of information. Aggregation is essential to present and understand data. But for every level of aggregation, the dimension of disparities in what has been aggregated is lost.

Consider this example :

Aggregation and Birth Rates
If village births data is reduced to a single figure of how many births took place we lose gender differences in birth. So there is a call to provide gender disaggregated figures for birth. Similarly data from the village is transmitted up after disaggregation for Scheduled castes and tribes.

Then suppose the data is aggregated into a single figure for births at block level with disaggregation for SC, ST and gender only then inter village disparity is lost. On the other hand if all village level data is handed up there may be too much information to make sense of. Thus at the block level, inter village level disparities are needed if the block officer in charge is to react to it. But at the district office, block level aggregation is appropriate to indicate the weak blocks and take action. Village level data is not the key.

However the district office would also have to know how the block office is planning it s work as regards addressing the birth rate. For this purpose it would find it useful to look at the village disaggregation. In case a block is weak then they would be able to look at the gaps.

Similarly a block level office may also seek to get the disaggregation of data of habitations in each village- not to transmit up – but to identify what is going wrong within a village. To stretch it further, even intrafamilial disaggregation of data may be useful for some issues such as women's control over decision making, seeking of health care and use of family resources.

Thus the state office would want information aggregated at the district level and block level. The district office would need information aggregated at block level and the village level. The block office would need information aggregated at the village level and the habitation level. All three offices would want all the above data with dis-aggregation for caste and for gender.

Data aggregation becomes important at the stage of data tabulation and analysis.

Whenever data is presented as a table or graph the aggregation leads to some parameters of the information becoming more explicit and other elements of the information becoming lost.

In these days of computerised analysis of data, there is advantage in feeding in the raw data and then using it to analyse in the form of different tables so that relationships between many more parameters can be studied.

### Types of Information

Information can be categorised into some broad types related to what they describe.
One possible such categorisation would be:

a) Information about health needs/status:
b) Information about facility functioning and service delivery.
c) Information about Resources : facility inputs: buildings, equipments, supplies, manpower, and Money, sources of finances etc.
d) Information about perceptions.
e) Informations about policy and poltical context.

### Sources of Information

This could be broadly categorised into two groups:

a) Secondary Data: Information already collected and published or communicated by others.
b) Primary Data: Information collected by the programme management, directly or by hired agencies.

### Main Sources of Information[1]

Below is a list of frequently used information sources for health planning. A description of each of these sources is given below along with information on how to access these sources:

a) Census[2]
b) Registration of Vital Information[1]
c) Sample Registration System[1]
d) IIPS(International Institute of Population Studies) surveys: National Family Health Surveys, Rapid Household Surveys, Facility Surveys
e) UNICEF Surveys: Multi Indicator Cluster Surveys
f) NSSO Surveys: Special round on Health (for example 52nd round)
g) National Nutrition Monitoring Board
h) Case Registration and Treatment Records from Hospitals
i) Notifiable disease returns
j) Disease surveillance systems reports
k) Management Reports and returns
l) Information from meetings with individuals and groups

## CENSUS

### Introduction

The census is an important source of health information, an intermittent counting of population. It is taken in most countries of the world at regular intervals, usually of 10 years. The first regular census in India was taken in 1881, and others took place at 10-year intervals. The last census was held in March 2001. The legal basis of the census is provided by the Census Act of 1948. The supreme officer who directs

1. These sections draw from Gupta M.C. & B.K. Mahajan: *Text book of Preventive Medicine*, pp. 402-403, 3rd edition, 2003 and *Park Text Book of Preventive and Social Medicine*, pp. 639, 18th edition, 2005
2. WHO (1952) Technical Report series No. 53

guides and operates is the Census Commissioner for India.

**Definition** "the total process of collecting, compiling and publishing demographic, economic and social data pertaining at a specified time or times, to all persons in a country or delimited territory".

**Frequency** The census is usually conducted at the end of the first quarter of the first year in each decade.

**Strengths**

- High degree of reliability.
- The census contains a mine of information on subjects not only demographic, but also social and economic characteristics of the people, the conditions under which they live, how they work, their income and other basic information.
- These data provide a frame of reference and base line for planning, action and research not only in the field of medicine, human ecology and social sciences but in the entire governmental system.
- Population census provides basic data (such as population by age and sex) needed to compute vital statistical rates, and other health, demographic and socio-economic indicators including growth rate, birth rate, total fertility rate, life expectancy etc.
- Data up to village level is available.

**Weaknesses**

- **Periodicity:** Once in ten years is a very low frequency for most programme planning processes. It needs considerable organisation and is a costly exercise in terms of people, money and material.
- **Delay:** Often census results as can be used for district planning come after two or more years. On some parameters results taken even longer.
- Not a source of mortality data by cause or any morbidity data.

**Access to data**

This data can be accessed from:
Office of the Registrar General of India, 2-A, Mansingh Road, New Delhi 110 011
Website: www.censusindia.net

## REGISTRATION OF VITAL EVENTS

**Introduction**

Registration of vital events (e.g., births, deaths) is done by various agencies in different states. These agencies are of four types – Panchayat, Revenue, police, and health. The national office in charge is that of the Registrar-General of Health. If registration of vital events is complete and accurate this would be invaluable for health planning. In 1873, the Govt. of India had passed the Births, Deaths and Marriages

Registration Act, but the Act provided only for voluntary registration. States like Tamil Nadu, Karnataka and Assam passed their own Acts. In an effort to improve the civil registration system, the govt. of India promulgated the Central Births and Deaths Registration Act in 1969. The Act came into force on 1 April 1970. The Act provides for compulsory registration of births and deaths throughout the country, and complication of vital statistics in the States so as to ensure uniformity and comparability of data. The implementation of the Act required adoption of rules for which also, model guidelines have been provided. The Act also fixed the responsibility for reporting births and deaths. While the public (e.g., parents, relatives) are to report events occurring in their households, the heads of hospitals, nursing homes, hotels, jails or dharmashalas are to report events occurring in such institutions to the concerning Registrar. The time limit for registering the event of births is fill in and of deaths is 21 days. In case of default a fine up to Rs. 50 can be imposed.

| Birth and Death registration collection | States |
|---|---|
| By Panchayat Department | Bihar, UP, Rajasthan. |
| By Revenue System (Tehsildar, Village munsif etc.) | AP, Tamil Nadu, Karnataka. |
| By Police Department | Haryana, Punjab, Jammu & Kashmir |
| By Health Department | Kerala, Orissa, West Bengal. |

Birth Registration includes date and place of occurrence, sex, type of birth, attendant at birth, date of registration.

Death Registration includes name, age, sex, place, attendant, residence and cause of death.

**Definition**

A vital events registration system as including "legal registration, statistical recording and reporting of the occurrence of, and the collection, presentation, analysis and distribution of statistics pertaining to vital events, i.e., live births, deaths, foetal deaths, marriages, divorces, adoptions, legitimations, recognition, annulments and legal separations". Registration of vital events has been the foundation of vital statistics.

**Strength:**

Data Available annually. Gives a picture of births and deaths and their causes. Where the data reporting percentage is high it can be used for planning – as district , and state level disaggreagation of information s available and useful.

**Weakness:**

There is no uniformity in the system of the Registration system in India, Data is collected by different sources and the data is grossly deficient in regard to accuracy, timeliness, completeness and coverage. The extent of

under-registration in States range from 38 to 97 per cent in respect of births, and 3 to 83 per cent in case of deaths. Information regarding cause of death, as provided by the informant is accepted without probing.

**Access to data**

www.censusindia.net>> Census of India >>Vital. Statistics>>SRS> English Version, Hindi Version

## SAMPLE REGISTRATION SYSTEM (SRS)

### Introduction

The Sample Registration System (SRS) is a large-scale demographic survey for providing reliable annual estimates of birth rate, death rate and other fertility & mortality indicators at the national and sub-national levels. Initiated and conducted by the OFFICE OF THE REGISTRAR GENERAL, INDIA in 1964-65, it became fully operational during 1969-70.. The sample unit in rural areas is a village or a segment of it, if the village population is 2000 or more. In urban areas, the sampling unit is a census enumeration block with population ranging from 750 to 1000. The SRS sample is replaced every ten years based on the latest census frame. It had been a practice to stagger the replacement process over 2-3 years. However, the latest replacement has been carried out in one go.

Effective from January 2004, this sample is based on the 2001 Census frame. At present, SRS is operational in 7,597 sample units (4,433 rural and 3,164 urban) spread across all States and Union territories and covers about 1.3 million households and 6.73 million population.

### Features/Process:

- A base line survey of the sample unit to obtain the usual resident population of the sample area through a household schedule.
- Continuous (longitudinal) enumeration of vital events pertaining to the usual resident population by locally resident enumerator. This continuous enumeration is done by part time enumerators, who are generally school teachers paid an honorarium for this work. Each enumerator appoints specified informants in his area and whenever information is provided, he visits the specified household. In addition he conducts the fortnightly visit.
- An independent half- yearly survey of birth and death by an investigator (supervisor) who is in full time employee. Each supervisor is in charge of 12 enumerators.
- Matching of events reported by the two systems.
- Field re-verification of unmatched and partially matched events.

### Strengths:

High Reliablity: Large Sample size. It is a major source of health information. Since the introduction of this system, this is considered the most reliable information on birth and death rates, age-specific fertility and

mortality rates, infant and adult mortality rates and gender specific mortality rates. The confidence limits and the range of values are also published.
Frequency: Annual: usually available in the month of April.

**Weakness:**
Data comes with a two year gap. Thus 2004 data is made available in the year 2006.
Limited parameters on which information is available.

**Access to data**
www.censusindia.net>>vital statistics>> Sample Registration System

## NOTIFICATION OF DISEASES

Diseases which are considered to be serious to public health are included in the list of notifiable diseases. Notification of infectious diseases was the first health information sub-system to be established. Lists of notifiable diseases vary from country to country, and also within the same country between the States and between urban and rural areas. Usually The notification system is linked up with the vital statistics machinery and the reporter is often the village chowkidar or headman. With the introduction of village Health Guides and multipurpose workers, the reporting responsibility is now shifted from the village chowkidar to the health workers.

**Objective:**

- To effect prevention and/or control of the disease.
- A valuable source of morbidity data i.e., the incidence and distribution of certain specified diseases which are notifiable.

At the international level, the following diseases are notifiable to WHO in Geneva under the International Health Regulations (IHR) -

1. Cholera, 2. Plague 3. Yellow fever.

A few others-Louse-borne typhus, Relapsing fever, Polio, Influenza, Malaria, Rabies and Salmonellas are subject to international surveillance.

This information is published by WHO on a world-wide basis. The Expert Committee on Health Statistics in its third Report recommended that yearly data of notification should be detailed by age and sex.

**Strengths:**

- Notification provides valuable information about fluctuations in disease frequency.
- It also provides early warning about new occurrences or outbreaks of disease.
- The concept of notification has been extended to many non-communicable diseases and conditions notably cancer, congenital malformations, mental illness, stroke and handicapped persons.

**Weaknesses:**

- Notifications covers only a small part of the total sickness in the community
- The system suffers from a good deal of under-reporting
- Many cases especially atypical and sub clinical cases escape notification due to non-recognition, e.g., rubella, non-paralytic polio, etc. The accuracy of diagnosis and thereby of notification depends upon the availability of facilities for bacteriologial, virological and serological examination. The lack of such facilities in the rural areas of India also works against the correct reporting of the causes of sickness.

**Access to Data**

Central Bureau of Health Intelligence
Ministry of Health & Family Welfare
Nirman Bhavan
Maulana Azad Road
New Delhi 110 011

## HOSPITAL RECORDS

### Introduction

In a country like India, where registration of vital events is defective and notification of infectious diseases extremely inadequate, hospital data constitute a basic and primary source of information about diseases prevalent in the community. The eighth report of the WHO Expert Committee on Statistics recommended that hospital statistics be regarded in all countries as an integral and basic part of the national statistical Programme.

**Strengths:**

- Hospital discharge sheets contain much useful information on diagnosis, medical and surgical procedures, complications, length of stay, laboratory data, etc. A study of hospital data provides information on the following aspects:
  (a) Geographic sources of patients
  (b) Age and sex distribution of different diseases and duration of hospital stay

(c) Distribution of diagnosis
(d) Association between different diseases
(e) The period between disease and hospital admission
(f) The distribution of patients according to different social and biological characteristics.
(g) The cost of hospital care.

- Such information may be of great value in the planning of health care services
  Indices such as
  - bed-occupancy rates.
  - Duration of stay.
  - Cost-effectiveness of treatment policies

  are useful in monitoring the use of hospital facilities.
- If hospital based case control studies (a particular form of epidemiology work) are done we can learn about social and many medical determinants or associations of disease .
- This may be the only way to get to data about non communicable disease .Also for diseases with prevalence less than 1% where surveys may not show it up. Or where there is a disease cluster – for example fluorosis. District health planners must mandatorily look at hospital based disease profile without commenting and forming an opinion on prevalence of the disease as such.

**Weaknesses:**

- They constitute only the "tip of the iceberg" – i.e., they provide information on only those patients who seek medical care, but not on a representative sample of the population. Mild cases may not attend hospitals; sub clinical cases are always missed.
- The admission policy may vary hospital to hospital therefore hospital statistics tend to be highly selective . More important the quality of report maintenance and ability to retrieve and recall data is limited.
- Population served by a hospital (population at risk) cannot be defined. There are no precise boundaries to the catchments are of a hospital. In effect, hospital statistic provide only the **numerator** (i.e., the cases), not the denominator.
- A poor guide to the estimation of disease frequency in a community.

n spite of the above limitations, a lot of useful information about health care activities and utilisation can ɔe derived from hospital records.

**Recommendation:**

For the development of hospital statistics, the importance of establishing a medical record department in each hospital cannot be over emphasised. Computerisation of medical records will enable medical care to be more effectively rendered, better planned and better evaluated.

**Access to Data**

The source is each hospital. Some hospitals with medical record systems publish their data annually or even monthly. Others can supply it on demand. Hospitals that do not have a medical record systems would be unable to supply such information.

## DISEASE REGISTERS

"The term "registration" implies something more than "notification." A register requires that a permanent record be established, that the cases be followed up, and that basic statistical tabulations be prepared both on frequency and on survival. This may be the only way to estimate prevalence of diseases like cancers where sample surveys and even large household surveys may not be able to capture the prevalence.

Morbidity registers exist only for certain diseases and conditions such as stroke, myocardial infarction, cancer, blindness, congenital defects and congenital rubella. Tuberculosis and leprosy are also registered in many countries where they are common.

- Morbidity registers are a valuable source of information as to the duration of illness, case fatality and survival. These registers allow follow-up of patients and provide a continuous account of the frequency of disease in the community.
- Even in the absence of a defined population base, useful information may be obtained from registers on the natural course of disease, especially chronic disease in different parts of the world.
- If the reporting system is effective and the coverage is on a national or representative basis, the register can provide useful data on morbidity from the particular diseases, treatment given and disease-specific mortality."

**Access to Data**

Division of Epidemiology and Cancer Registry, Cancer Institute, (WIA)
Chennai 600020. ( for cancers)
Center for Chronic Disease Control: T-7, Green Park Extension,
New Delhi 110016, (for many non communicable diseases).
And other disease specific research institutions for AIDS,
Cholera and enteric diseases, blindness control etc.

## POPULATION SURVEYS

Population surveys can be conducted in almost any setting ; sampling techniques have been developed so that estimates at any level of precision desired within the constraints of available resource can be achieved. Health surveys may be cross- sectional or longitudinal; descriptive or analytic or both .

## National Sample Survey Organisation

The National Sample Survey Organisation, came into existence in 1950 with the objective of conducting large-scale surveys to provide data for national income estimation as required for planning and policy formation. It has since grown into one of the largest organisations of its kind and has expanded its activities in several directions.

The NSSO carries out annual rounds of multi-purpose socio-economic surveys including special round on health, undertakes field work for the Annual Survey of Industries, follows-up surveys of the Economic Census, sample checks on area enumeration and crop estimation surveys and prepares the urban frames useful in drawing of urban samples, besides collection of price data from rural and urban sectors. The major activities of the NSSO pertain to survey design, field operations, processing of data collected and releasing of results based on the sample surveys.

The National Sample Survey Organisation in India has been active in conducting interview surveys related to health care ; these surveys have provided some country-wide data on general morbidity, family planning and vital events, but the morbidity data is limited because of the interview method. This is why interviews are often combined with health examination surveys and/ or laboratory measurements. The NSSO data is valuable for economic planning of health as we learn about disease frequency by broad symptom category, some understanding of health seeking behaviour and household level out of pocket cost of care.

The NSSO 60th round has been recently released.

**Access to data**

www.mospi.nic.in

http://mospi.nic.in/mospi nsso.htm

## NATIONAL HEALTH & FAMILY WELFARE SURVEY (NFHS)

The National Family Health Survey (NFHS) is a large-scale, multi-round survey conducted in a representative sample of households throughout India. The NFHS is a collaborative project with different agencies.

The Ministry of Health and Family Welfare (MOHFW), Government of India, designated IIPS as the nodal agency responsible for providing coordination and technical guidance for the NFHS. The International Institute for Population Sciences (IIPS) is one of the few Institutes set up solely for the purpose of studying demography. The IIPS offers academic courses in Population Sciences and takes major initiatives to strengthen the reproductive health, research and training programmes.

NFHS is funded by the United States Agency for International Development (USAID) with supplementary

support from British Government's overseas aid(DFID) and United Nations Children's Fund (UNICEF) and UNFPA.. IIPS collaborated with a number of Field Organisations (FO) for survey implementation. Each FO was responsible for conducting survey activities in one or more states covered by the NFHS. The first National Family Health Survey (NFHS-1) was conducted in 1992-93. The survey collected extensive information on population, health, and nutrition, with an emphasis on women and young children. Eighteen Population Research Centres (PRCs), located in universities and institutes of national repute, assisted IIPS in all stages of conducting NFHS-1. The second National Family Health Survey (NFHS-2) was conducted in 1998-99 in all 26 states of India with added features on the quality of health and family planning services, domestic violence, reproductive health, anemia, the nutrition of women, and the status of women. All the state-level and national-level reports for the survey have already been published.

The third NFHS survey was conducted in 2005-06 in a similar manner to NFHS-2. Preliminary results are available.

**Access to data**
www.nfhsindia.org
www.iipsindia.org
email: nfhs@iips.net

## NATIONAL HABITATION SURVEY 2003

The National Habitation Survey 2003 is an amazing data-base available on line of every single hamlet in this vast nation. This provides a detailed listing of all habitations with respect to villages, blocks and districts. For each and every single habitation it provides the data on SC and ST population. For each and every habitation it also provides the government facilities available – anganwadis, primary health centers, schools etc. It then also describes the drinking water situation in detail – including an estimate of water availability per capita.

Though this was meant for planning drinking water availability, itself a major concern of the district plan, its larger role is in providing an authentic listing of all hamlets with basic population and SC/ST information that can be used for considerable planning purposed. Hamlet level data as different from village level data is very useful in local health planning and this is perhaps the only source that provides hamlet level data without losing the correlation to village and block data.

**Access to data**
http://ddws.gov.in/habquery/main_menu.asp

### Primary Data

Very often we find that despite so many sources there is still very little data about the district and we need to undertake primary data collection to make the district plan relevant.

The usual forms of data collection are:

Health surveys. (epidemiological and demographic)
Health services utilisation surveys.
Personnel surveys.
Rapid Appraisals, Participatory Rapid Appraisals
Focus Group Discussions and other qualitative methods
In next chapters we shall discuss these tools of health planning.

## Health Systems Research

Most research tends to be clinical or epidemiological. But there is now increasing recognition of the need to look at the nature of health services and systems. In particular there are research questions relating to the interactions between components of a system. Much of this may be just good quality evaluation work. Some of these look at cost benefit and cost effectiveness analysis. Often the research is operational research or action research where there is analytic documentation of a programmes activities. Some of the research is directed at answering "what – if" questions - where we know *what* would have been outcomes *if* a certain set of decisions have been made.

In summary health systems research is all the research that meets information needs of the health planning process using methodologies appropriate to that purpose.

### I. Review questions

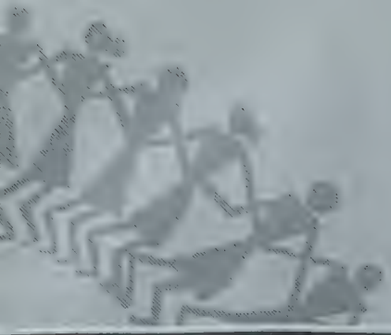
1. What are the advantages and disadvantages of aggregating data?
2. What are the various sources of secondary data for health planning? what are the main information gaps that remain despite these sources? How can they be covered?
3. What information is required to be able to evaluate the quality of any data?
4. What is the reliability and representativeness of different major sources of secondary data.
5. What is health systems research?

### II. Application questions

1. Have you observed or participated in any data collection? Describe the experience briefly and highlight the strengths and weaknesses of the process. How did the process affect the data that was finally gathered?

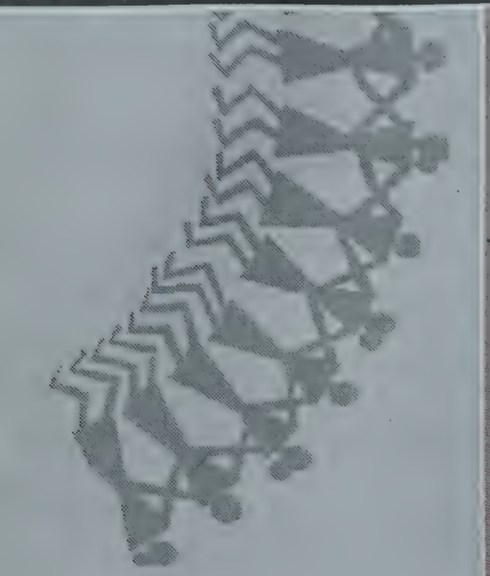
### III. Project assignment

1. Study the data pertaining to your area from the latest SRS and NFHS-III and the UNICEF annual coverage evaluation survey. Make a table to compare the three as well as compare with data from previous rounds. Discuss how this information would influence your district plan.



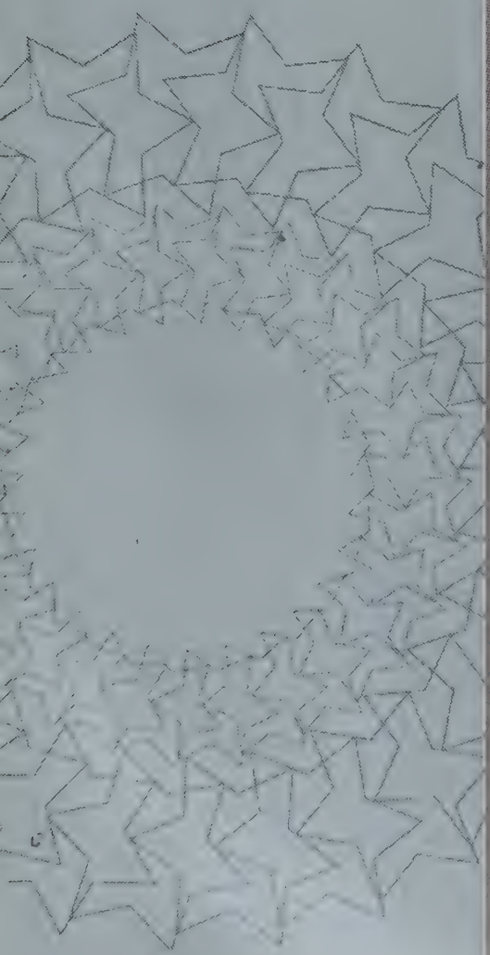
# Lesson EIGHT

## Epidemiology and the District Health Plan



### In this lesson we shall discuss:

- Definitions of epidemiology.
- Design issues of an epidemiological survey -
  a. Defining a survey objective.
  b. Why and how to choose a sample.
  c. How to design a questionnaire for a survey.
  d. How to present the report and display the data.
- The 30 cluster sample survey as a tool.



**Definitions:** *Epidemiology is the study of the distribution, frequency and determinants of health problems and disease in human populations.* The purpose of epidemiology is to obtain, interpret and use health information to promote and reduce disease. *Epidemiology is not the study of epidemics.*

Obviously epidemiology is an indispensable tool of district planning. This is a vast and most interesting subject. Below we give a brief overview of some points that are useful for a person with no professional public health training.

Broadly there are two types of epidemiology the district planner needs:

**Descriptive Epidemiology**: It is concerned with disease distribution and frequency: what is the problem and its frequency. It can be further defined by the following questions:
Who? The age, sex, education, occupation, income, culture, family size, nutritional status.
Where? Towns or villages or isolated dwellings. Proximity to rivers, forests, wild animals, or sources of toxic substances.
When? When are there new cases? Group together by cases per day, or per week or per month as appropriate? The last gives us a picture of seasonality of disease.

**Analytical Epidemiology:** Analyses the determinants of disease, and also tests hypothesis on what causes disease. The How and Why of disease.

**Incidence:**This measures the number of new cases, episodes or events occurring over a defined period of time, commonly one year.

**Prevalence:** Measures the total number of existing cases, episodes or events occurring at one point in time.

Example: In leprosy the total number of patients on the register in a given month or year is the prevalence of leprosy for that month/year. On the other hand the number of new cases added per month or in the year which were not in the register in the previous month/year is the incidence of leprosy.

For short duration cases like measles, malaria, diarrhea, ARIs we usually use incidence. For chronic cases- tuberculosis, HIV etc we measure prevalence.

Prevalence is what we usually get from cross-sectional surveys.

Incidence or prevalence is usually expressed as a rate - the number of new cases or existing cases divided by the total population at risk multiplied by 1000 or whatever factor is convenient to bring out the term.

Examples:
On 1st April 2006, there were 120 cases registered leprosy in district Champa with an estimated population of 400000 people. The prevalence rate would be 0.03 persons 100 people or 0.3 cases per 1000 people or as is much more convenient to express 3 cases per 10,000 population.

In the block of Pali we have 50 cases of malaria from 750 slides examined. The block population is 1 lakh. The incidence rate would be expressed as 6.66 per 100 slides- the slide positivity rate.

The denominator expresses the universe from which the sample is taken.

**EPIDEMIOLOGICAL SURVEYS:**

Surveys offer a very useful way of collecting additional information that is not available with reliability from the routine health information or from surveillance systems.

However surveys consume lot of time and human effort and sometimes a lot of money as well. Unless their need is clear and the design of the study is well done – it could lead to enormous wastage of human effort.

The main steps of an epidemiological survey are outlined in the table given below:

1. Identify the problem; determine priority of problem
2. Formulate hypotheses- what questions is the survey designed to answer.
3. Define objectives and methods.
4. Survey Design
   a. Sampling
   b. Observations/Measurements
   c. Instruments of survey: Questionnaire design and field testing.
   d. Training of data collectors.
5. Organise the survey:
   a. completing Manpower recruitments,
   b. raising resources /Finances,
   c. tools ( eg copies of questionnaire),
   d. planning transport, schedules, accommodation,
   e. planning communications, supervision.
6. Conduct survey and collect data.
7. Enter data
8. Analyse and interpret data.
9. Write report.
10. Communicate findings .
11. Incorporate information into the district plan.

**TYPES OF SURVEYS:**

*Cross-sectional Survey*: Examines people at one point in time and therefore provides prevalence data, particularly for infections or conditions that last a long time. It can provide the incidence of other diseases which are acute and of short duration at that point of time. This "point of time" can last a few weeks also while the survey is completed provided there is no major change of disease in this time.

The cross-section survey misses out on seasonality – and one has to plan when to do the survey to capture a disease that is seasonal in appearance. We would also have to repeat such surveys in the same month if we are looking for improvements or changes in the prevalence.

Other limitations are that they are not useful

for rare diseases or events or those of v ery short duration. The cross-sectional survey is best used for descriptive epidemiology. It is not the tool for analysis of determinants

Usually when a survey is planned it is a cross-sectional survey.

*Longitudinal Surveys:* The essential feature of a longitudinal survey is that it provides repeated observations over time on a set of variables for the same population belonging to the survey. For example, a longitudinal survey can be used to look at the health care seeking practices of pregnant women in a specific community or the impact of ASHA interventions on infant and young child feeding or the pattern in which measles occurs over the year. Through the survey of individuals, however, information may be gathered about households, services, determinants of disease etc. Many may just prefer to call this repeated cross-sectional surveys and reserve the term longitudinal survey for the cohort study.

In contrast the term longitudinal studies often refer to a cohort study. In a cohort study the same group of persons are followed up over a period of time to see changes in health and disease patterns and other related changes. The cohort study is not discussed here and it is a difficult study to organize and to analyse.

## USES AND LIMITATIONS OF DIFFERENT TYPES OF ANALYTICAL STUDIES

You may use any of the three types of analytical studies (cross-sectional comparison, case-control or cohort) to investigate possible causes of a problem.

**For example**, if you assume there is a causal relationship between the use of a certain water source and the incidence of diarrhea among children under five in a village with different water sources:

- You can select a group of children under five years and check at regular intervals (e.g., every two weeks) whether the children have had diarrhoea and how serious it was. Children using the suspected water source and those using other sources of water supply will be compared with regard to the incidence of diarrhea (**cohort study**).
- You can also conduct **a case-control study**. For example, you may compare children who present themselves at a health centre with diarrhea (cases) during a particular period of time with children presenting themselves with other complaints of roughly the same severity, for example acute respiratory infections (controls) during the same time, and determine which source of drinking water they had used.
- In a **cross-sectional comparative study**, you could interview mothers to determine how often their children have had diarrhea during, for example, the past month, obtain information on their source of drinking water, and compare the source of drinking water of children who did and did not have diarrhoea.

Cross-sectional comparative studies and case-control studies are usually preferred to cohort studies for financial and practical reasons. However, cohort studies are stronger in establishing causal relationships because confounding variables are to a large extent eliminated. If the study is well designed, the 'confounders' are equally distributed among the cases and controls. Experimental studies have the same advantage as cohort studies.

**Cross-sectional comparative studies** and **case-control studies** are relatively quick and inexpensive. With cross-sectional comparative studies, however, the number of stratifications one can make is limited by the size of the study. The problem with case-control studies is sometimes the difficulty of making a precise selection of a control group which is comparable to the study group on one or two specific variables (e.g., well- and malnourished children of the same sex and age, in months).

**Cohort studies** are a relatively sure way to establish causal relationships. However, they take longer than case-control studies and are **labour intensive**, and therefore **expensive**. The major problems are usually related to the identification of all cases in a study population, especially if the problem has a low incidence. Further, the following up all persons included in the study over a number of years may be impossible because of population movement.

## DEFINING THE SURVEY OBJECTIVES

It is essential to define survey objective clearly. Collecting all sorts of information, just because we have the power to order it collected, is poor practice. Only data that is useful and will be utilized should be collected. One way to limit such data collection ambitions is to state the research topic in a couple of sentences and then state clearly how it is relevant and would change what decisions we are already making – if we got this information. We then also prepare what are known as "dummy" tables. These are blank tables in which the data would be consolidated.

Each table denotes one or more information that we expect out of the survey. It is like planning outcomes. For newcomers to surveys it is a good idea to start with dummy tables and then design the questionnaires. It would ensure not only that no unnecessary data is collected, it also ensures that essential information is not left out. Check the data that would emerge from the dummy tables with the objectives to see whether such data answers the research question.

*Sample dummy tables*:

| | Male | Female | Total |
|---|---|---|---|
| Children born in last one month | | | |
| Of above those who were weighed and birth weight is available | | | |
| Those whose birth weight was above 2.5kg | | | |
| Those who were weighed with wts between 2 and 2.5 kg | | | |
| Those babies with wts less than 2 kg. | | | |

Selecting the Sample:

The population we are planning for is called the reference population.( it may also be referred to as the universe.) It is to study disease and health service delivery related to them that the survey is planned.

But it is not feasible to survey all of them for a district plan. As we increase the data to be gathered and the numbers to be studied we tend to lose quality of information. It is therefore much better to study a sample of the reference population. This sampled population is called the study population.

When selecting the sample- the main concern is that each person in the reference population has an equal chance of being included in the study; that the sample is representative of the whole population and that there is no selection bias.

There are broadly two types of samples: Random and Non-Random

**RANDOM SAMPLING STRATEGIES TO COLLECT QUANTITATIVE DATA**

If the aim of a study is to *measure* variables distributed in a population (e.g., diseases) or to *test hypotheses* about which factors are contributing significantly to a certain problem, we have to be sure that we can generalise the findings obtained from a sample to the total study population. Then, purposeful sampling methods are inadequate, and **probability -** or **random sampling methods** have to be used.

PROBABILITY SAMPLING involves using random selection procedures to ensure that each unit of the sample is chosen on the basis of chance. All units of the study population should have an equal, or at least a known chance of being included in the sample.

Probability sampling requires that a listing of all study units exists or can be compiled. This listing is called the **sampling frame.**

The following probability sampling methods will be discussed:

- Simple random sampling
- Systematic sampling
- Stratified sampling
- Cluster sampling
- Multistage sampling

**(1) Simple random sampling**

This is the simplest form of probability sampling. To select a simple random sample you need to:

- Make or search for an existing numbered list of all the units in the population from which you want to draw a sample
- Decide on the size of the sample
- Select the required number of sampling units, using a 'lottery' method or a table of random numbers

**For example**, a simple random sample of 50 students is to be selected from a school of 250 students. Using a list of all 250 students, each student is given a number (1 to 250), and these numbers are written on small pieces of paper. All the 250 papers are put in a box, after which the box is shaken vigorously, to ensure randomisation. Then, 50 papers are taken out of the box, and the numbers are recorded. The students belonging to these numbers will constitute the sample.

**(2) Systematic sampling**

In SYSTEMATIC SAMPLING individuals are chosen at regular intervals (for example every fifth) from the sampling frame. Ideally we randomly select a number to tell us where to start selecting individuals from the list.

**For example**, a systematic sample is to be selected from 1200 students of a school. The sample size selected is 100. The sampling fraction is:
The sampling interval is therefore 12. (1200/100=12)

The number of the first student to be included in the sample is chosen randomly, for example by blindly picking one out of twelve pieces of paper, numbered 1 to 12. If number 6 is picked, then every twelfth student will be included in the sample, starting with student number 6, until 100 students are selected: the numbers selected would be 6, 18, 30, 42, etc.

Systematic sampling is usually less time consuming and easier to perform than simple random sampling. However, there is a risk of bias, as the sampling interval may coincide with a systematic variation in the sampling frame. For instance, if we want to select a random sample of days on which to count clinic attendance, systematic sampling with a sampling interval of 7 days would be inappropriate, as all study days would fall on the same day of the week (e.g., Tuesdays only, which might be a market day).

**(3) Stratified sampling**

The simple random sampling method described above has as disadvantage that small groups in which the researcher is interested may hardly appear in the sample.

If it is important that the sample includes representative study units of small groups with specific characteristics (for example, residents from urban and rural areas, or different religious or ethnic groups),

then the sampling frame must be divided into groups, or STRATA, according to these characteristics. Random or systematic samples of a pre-determined size will then have to be obtained from each group (stratum). This is called STRATIFIED SAMPLING.

Stratified sampling is only possible when we know what proportion of the study population belongs to each group we are interested in.

An advantage of stratified sampling is that we can take a relatively large sample from a small group in our study population. This allows us to get a sample that is big enough to enable us to draw valid conclusions about a relatively small group without having to collect an unnecessarily large (and hence expensive) sample of the other, larger groups. However, in doing so, we are using unequal sampling fractions and it is important to correct for this when generalising our findings to the whole study population.

**For example**, a survey is conducted on household water supply in a district comprising 20,000 households, of which 20% are urban and 80% rural. It is suspected that in urban areas the access to safe water sources is much more satisfactory. A decision is made to include 100 urban households (out of 4000, which gives a 1 in 40 sample) and 200 rural households (out of 16000, which gives a 1 in 80 sample). Because we know the sampling fraction for both strata, the access to safe water for all the district households can be calculated after the study (by multiplying the findings for the urban households by 40 and those for the rural households by 80, and then calculating statistics for the total sample).

**(4) Cluster sampling**

It may be difficult or impossible to take a simple random sample of the units of the study population at random, because a complete sampling frame does not exist. Logistical difficulties may also discourage random sampling techniques (e.g., interviewing people who are scattered over a large area may be too time-consuming). However, when a list of groupings of study units is available (e.g., villages or schools) or can be easily compiled, a number of these groupings can be randomly selected.

The selection of groups of study units (clusters) instead of the selection of study units individually is called CLUSTER SAMPLING.

Clusters are often geographic units (e.g., districts, villages) or organisational units (e.g., clinics, training groups).

**For example**, in a study of the knowledge, attitudes and practices (KAP) related to family planning in rural communities of a region, a list is made of all the villages. Using this list, a random sample of villages is chosen and all study units in the selected villages are interviewed.

**(5) Multi-stage sampling**

In very large and diverse populations sampling may be done in two or more stages. This is often the case in community-based studies, in which people are to be interviewed from different villages, and the villages have to be chosen from different areas. This type of sampling is frequently used in Health System Resrach. **For example**, in a study of utilisation of pit latrines in a district 150 homesteads are to be visited for interviews with family members as well as for observations on types and cleanliness of latrines. The district is composed of 6 wards and each ward has between 6 and 9 villages.

The following four-stage sampling procedure could be performed*:

1. Select 3 wards out of the 6 by simple random sampling.
2. For each ward select 5 villages by simple random sampling (15 villages in total).
3. For each village select 10 households. Since simply choosing households in the centre of the village would produce a biased sample, the following sampling procedure is proposed:
   - o Go to the centre of the village.
   - o Choose a direction in a random way: spin a bottle on the ground and choose the direction the bottleneck indicates.
   - o Walk in the chosen direction and select every (or, depending on the size of the village, every second or every third) household until you have the 10 you need. If you reach the boundary of the village and you still do not have 10 households, return to the centre of the village, walk in the opposite direction and continue to select your sample in the same way until you have 10. If there is nobody in a chosen household, take the next nearest one.
4. Decide beforehand whom to interview (for example the head of the household, if present, or the oldest adult who lives there and who is available).

A MULTI-STAGE SAMPLING procedure is carried out in phases and it usually involves more than one sampling method.

The main **advantages** of cluster and multi-stage sampling are that:

- A sampling frame of individual units is not required for the whole population. Existing sampling frames of clusters are sufficient. Only within the clusters that are finally selected is there a need to list and sample the individual units (if not using the bottle spinning method).
- The sample is easier to select than a simple random sample of similar size, because the individual units in the sample are physically together in groups, instead of scattered all over the study population.

The main **disadvantage** of this type of sampling is that:
Compared to simple random sampling, there is a larger probability that the final sample will not be representative of the total study population. The likelihood of the sample not being representative depends mainly on the number of clusters that is selected in the first stage. The larger the number of clusters, the

greater is the likelihood that the sample will be representative. Further, the sampling units at community level should be selected randomly (avoid convenience sampling!).

## Bias in sampling

BIAS in sampling is a systematic error in sampling procedures, which leads to a distortion in the results of the study.

Bias can also be introduced as a consequence of **improper sampling procedures,** which result in the sample not being representative of the study population.

**For example**, a study was conducted to determine the health needs of a rural population in order to plan primary health care activities. However, a nomadic tribe, which represented one third of the total population, was left out of the study. As a result the study did not give an accurate picture of the health needs of the total population.

There are several possible sources of bias that may arise when sampling. The most well known source is **non-response.** Non-response can occur in any interview situation, but it is mostly encountered in large-scale surveys with self-administered questionnaires. Respondents may refuse or forget to fill in the questionnaire. The problem lies in the fact that non-respondents in a sample may exhibit characteristics that differ systematically from the characteristics of respondents.

There are several ways to deal with this problem and reduce the possibility of bias:

- Data collection tools (including written introductions for the interviewers to use with potential respondents) should be pre-tested. If necessary, adjustments should be made to ensure better co-operation.
- If non-response is due to absence of the subjects, follow-up of non-respondents may be considered.
- If non-response is due to refusal to co-operate, an extra, separate study of non-respondents may be considered in order to identify to what extent they differ from respondents.
- Another strategy is to include additional people in the sample, so that non-respondents who were absent during data collection can be replaced. However, this can only be justified if their absence was very unlikely to be related to the topic being studied.

## PURPOSIVE SAMPLING OR NON RANDOM SAMPLING:

Here the selection is made on with a a clear purpose in mind. Eg We choose the slum nearest the medical college for it is easy to access.( convenience selection). Or we are looking for something very specific – like health problems in migrants – and we can only find few of them in each slum.( targeted selection.). Or it is a rare disease and we have to trace it by asking people especially patients whether they have heard of some patients with this diseases etc. Or we deliberately want to look at what is happening in a village where the programme is doing well or poorly to understand the special circumstances in such a situation. As long as one is very careful about the interpretation of data there are many types of use to which purposive sampling can be put.

Sample Size:

The other major question about sample is the size of the sample. To determine this we need to have a more accurate picture of the illness / event pattern.

The lower the expected prevalence the higher the sample size. Below a particular prevalence rate an event becomes too difficult to survey. For example tuberculosis may have a 0.1% prevalence. That is one case per 1000 persons. To get 50 cases of tuberculosis over 50,000 cases would have to be surveyed . Further when the prevalence is so low and everyone is tested, even with a very specific test (which means a very low number of false positives) there would be in absolute numbers a large number of false positives- larger perhaps than the number of positive cases)

The larger the sample size the greater the accuracy. Or the greater the accuracy needed or the more the confidence needed in the accuracy of the sample, the larger the sample size needs to be. However above a particular sample size, the quality of data collection drops or the expense of data collection goes up too high. Also, after a point, the increase in accuracy is not commensurate with each increase of sample size and we would be spending a lot without much gain. For purposes of planning a broad estimate may be adequate.

Thus if a disease or event has a 10% expected prevalence- then with a 50 person sample the accuracy range is anywhere from 3% to 22% - which is too high to be of use. With a 200 person sample the accuracy is anywhere from 6 to 15% which is considered acceptable for much of the level of planning we intend. At a sample size of 1000 we would expect a value between 8 and 12% which is very good.

For immunisation coverage studies where the percentage of un-immunized children may be in the range of 40% a sample size of about 200 would be adequate.

The ideal thing to do is to ask a statistician what the sample size should be. For any survey we should send the entire survey design and proposal and then ask for the sample size and we would get a reasonable answer. A reference support for this would be available through the PHRN or one of the state or central health resource centers..

Questionnaires:

Questionnaires look simple but good questionnaires are very difficult to draw up and require considerable skill that needs to be learnt.

There are two types – those that have to be read and filled in by the study person themselves and those that an interviewer or data collector asks. We shall consider the latter questionnaire here.

The main limitation is that information gathered depends on what people say they do, which might be different from what they actually do.

Below we list some features of a good questionnaire along with the common errors of questionnaire design.

| | |
|---|---|
| Each question must be simple, clear, unambiguous and non threatening | Often, questions are unclear, badly worded and may even contain two parts and two answers. |
| No leading questions | The questions should not suggest the correct/desired response. |
| Ask general questions first, more sensitive issues later. | Senstive and personal questions may get evasive answers or even non cooperation. |
| Know recall period for various items and ask accordingly | Most illnesses recall period is very low – for an episode of diarrhoea it may be only two weeks whereas for a severe jaundice it may be one year. No point in asking how many times you have had diarrhoea in the past year – most people would not remember it accurately. |
| Record directly what patient says or code answers | Interviewers should not have to interpret answers- but where a variety of answers are got – each possible answer could be coded and the interviewer could write in the code. |
| Ask limited number of questions. | The single most common problem is the long unwieldy questionnaire. As a general rule after basic questions on name age sex etc there may be another 10 to 15 questions allowing for an interview period of 15 minutes or four interviews an hour. Sometimes more questions are possible – but do not put it all into one survey- stick to those we are likely to act on and directly related to objectives. |
| Good translation essential. | Often the meaning and emphasis changes during translation. This is specially a problem with technical terms. |
| Pilot Testing of questionnaires essential. | Field testing when the questionnaire is administered both by the planner themselves and by a trained person or persons is essential to check whether the above points are adhered to. Also to finalise training materials. |

*Variables*: For each item on the questionnaire we need to have a clear definition and a standardized method of measuring and categorizing them.

*Repeatability/ replicability*: Each item and its method of collection and indeed the design of the whole survey should be repeatable. The repeatability of a measure is its ability to reproduce consistently the same information when repeated examinations of the same population are made by different observers. The more reliable the method the more repeatable it is.

### Training and Supervision:

It is essential that training of the data collectors be done rigorously. One part of it is explaining the objectives and what is expected of them and to whom and how they would administer the questionnaire.

The other is for them to actually administer the questionnaire in a number of houses under supervision and then go through what they have filled up.

While actual data collection is going on supervisors should visit them and check on the data gathering work going on. At least in 5 to 10% of families/individuals studied a cross-check by the supervisor is necessary. Data collectors should be told to enter data from interviews directly into the questionnaires and not into note books or diaries from which they will copy in the information later as there is loss of information and it is more difficult for supervision. *Failure to supervise data collection invariably leads to poor quality , unreliable data. Such supervision carries considerable costs but is mandatory.*

### Ethics of the survey:

Three aspects need to be kept in mind.

- People should be informed and know the objectives of doing the survey.
- Their consent should be taken after they have properly informed.
- the information taken them should be confidential.
- The results should be shared with the participants

### Data Processing and Analysis:

This entire step has been dramatically changed by computerization. So much so that it is hardly needed to discuss manual methods of data sorting, tabulation and analysis. However there are still many districts where the computer is not available and the necessary skills for data use are not in place. Moreover one needs to understand what goes into data processing even when done by a computer. Therefore some basic familiarity with manual methods is advisable.

A combination of some steps manually and some steps done with a computer is what most districts currently use in practice.

As a general rule, if the sample size is less than 300, data analysis can be done quite quickly and easily by two or three persons working together using hand-tallying and hand sorting to tabulate the data and then using a calculator to calculate the totals, percentages and rates.

## Steps in Data Tabulation and Analysis:

1. Define what needs to be analysed. One of the best ways of doing this is the construction of dummy tables. The way data is tabulated decides a lot of how it is analysed.

2. Coding:
   a. ensure that all the data is brought into a form where it can be classified into simple categories. Usual category is yes or no. Another is a actual numerical value. A third is to code and then reduce many response into one of two to five numbers. This may require coding the answers
   Examples:
   - Did ASHA visit the new born: Yes/No ; yes =1, no =0.
   - How many visits did ASHA make to the newborn: 1, 2, 3, 4 etc ( enter the number).
   - Was ASHAs visit effective in changing behaviour:
     a. Mother started breastfeeding child in first hour
     b. Mother was given food to eat in first day.
     c. Child was kept warm and was not given a bath.
     d. Child was weighed.

   if all four are negative give 0, if one to three are positive give 1, if all If all 4 are positive give 2.

   This is the step of coding the data sheets. One can print the questionnaire such that the codes can be entered in a right sided column made for that purpose by those doing data entry and analysis.One can ask the interviewers themselves to code but usually it is better not to do so and to leave room in the questionnaire for more detailed statements- which are reduced to codes only at the data entry stage.
   b. ensure that no data gets entered twice during the tabulation. That is, each individual response on each item becomes part of only one cell in the table. There are a few exceptions to this ruie.
   c. No individual should be left out of a table, except in few exceptional situations. This would mean that we need to include a code in the response for anwers like – do not know; no information available, was not weighed, incomplete information.
   Example: Thus Did ASHA visit the newborn should be coded Yes=1, No=0 and do not know/ no information available =2.

3. Data entry: if coding is well done data entry can be done quickly with two persons working together. Insist on two persons to reduce errors in data entry and to reduce time. Usually part time data entry persons are ideal. Supervise and check this stage. The output of this stage is called data sheets.

4. Data analysis: This can be done using statistical software packages. But simple tabulation, for one variable and cross tabulation for correlation between two variable is often enough for most

district planning purposes. ( table 10.6 and table 10.7 for examples of tabulation and cross tabulation.) The dummy tables can be filled up from the data sheets by counting frequencies manually or simple sorting and counting techniques available on the software that can be easily picked up. We note that every district has been provided a data analyst and the minimum he was required to have demonstrated in the interview was precisely this skill. Thus this should not be such a barrier provided the planners can reach up to this stage.

5. Statistical tests of significance and other statistical analysis like correlation can also be easily learnt and the data analyst and the planning resource group should learn this. A statistician's help is useful and for larger studies and more complex work it is essential – but it does not replace the planners own grasp of this issue.

6. Interpretation of data needs careful reading of these data tables and contemplation. If the resultant data does not fit the expected pattern, do not give into the temptation of altering the data. It is usually this variation that is most informative. Think about it. Interpretation needs both a lot of thinking and some knowledge of theory.

## COMMUNICATING RESULTS

Considerable skills are needed in communicating the results to the members of the planning team and to the general public. The important part of this is the writing of the final report. The other is making a brief and popular presentation of the findings such that the general public can easily access and understand the information. For both of this one needs good quality of display of the information.

### Writing the final report

The usual format for a final report of an epidemiological study is:

- Title Page: one page
- Summary:: half to one page
- Introduction and Purpose – or justification for undertaking this study : one page.
- Objectives.: half page – about four or five lines.
- Details of methods used : 2 to 4 pages
- Results.: as much as is needed
- Discussion and interpretations : as much as is needed
- Conclusions and recommendations.: 2 to 4 pages
- References acknowledgements and appendices. As much as is needed.



**DISPLAY OF DATA:**

The common display forms are:

- Tables
- Graphs
- frequency histograms
- bar charts,
- pie charts,
- scatter diagrams
- maps.

In all the above use of tables and figures the following points are in common:

- Number each table or figure.
- Provide a concise self explanatory title above the table or figure.
- Clearly label every row and column with the units clearly shown. This is for the table.
- In graphs, histograms, bar charts and scatter diagrams clearly label the x axis and the y axis.
- Add a foot note indicating source of the information (especially for purposes of comparison or providing some related information we often need to take tables and figures from other studies to make our point.)

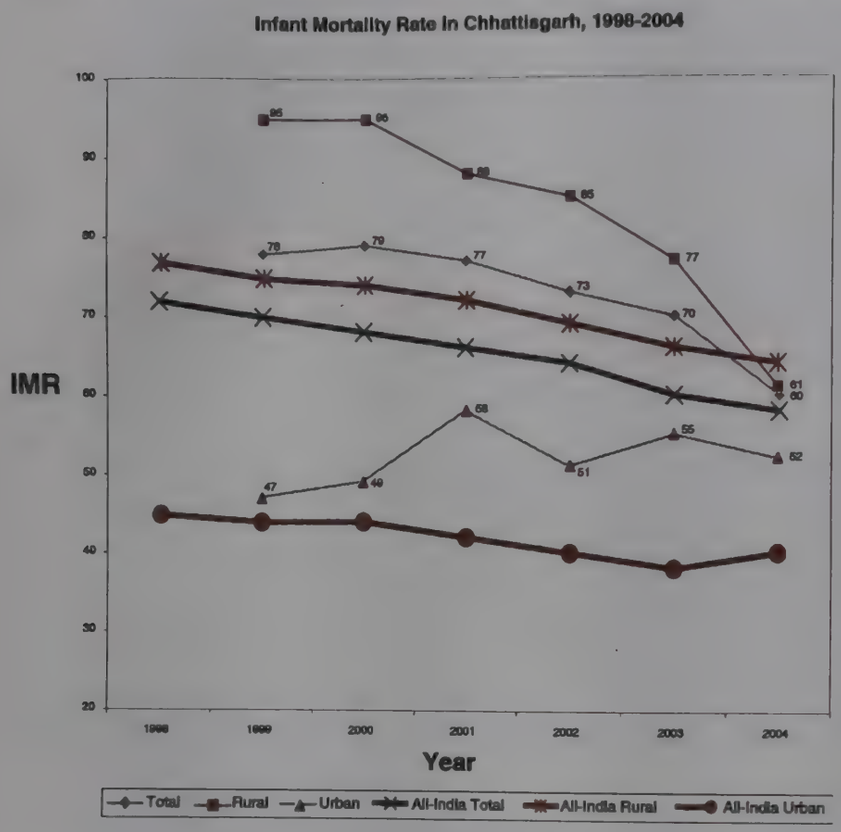
> *Whenever one uses information or data, always state clearly the source of information. Without this the information loses value.*

Given below is an example of each form of display- with a comment.

Graphs:

Graphs can be used to compare two frequency distributions. Horizontal axis is often time or a quantity. Vertical axis is often for frequency of occurrence - shown as a number or as a rate. The scales on the x-axis are in equal units and the midpoint of each interval is taken to represent all the measurements lying in this interval.

Figure 8.1: Infant Mortality Rate in Chhattisgarh and all-India, 1998-2004

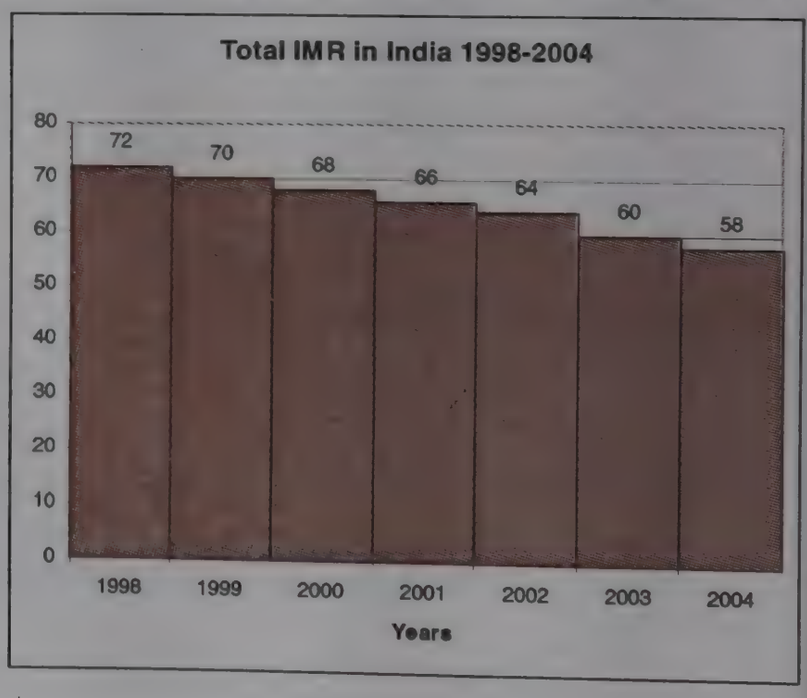



Source: Registrar General of India (1998-2006): 'SRS Bulletin', *Sample Registration System*, Office of the Registrar General of India, Ministry of Home Affairs, Government of India, New Delhi.

*Histograms*:

Best used for presenting frequency distribution of the same item. An important feature is that the bars of the histogram are contiguous. One bar immediately follows another with no space in between. The scale on the horizontal axis is a continuous measurement.

Figure 8.2: Total Infant Mortality Rate in India 1998-2004

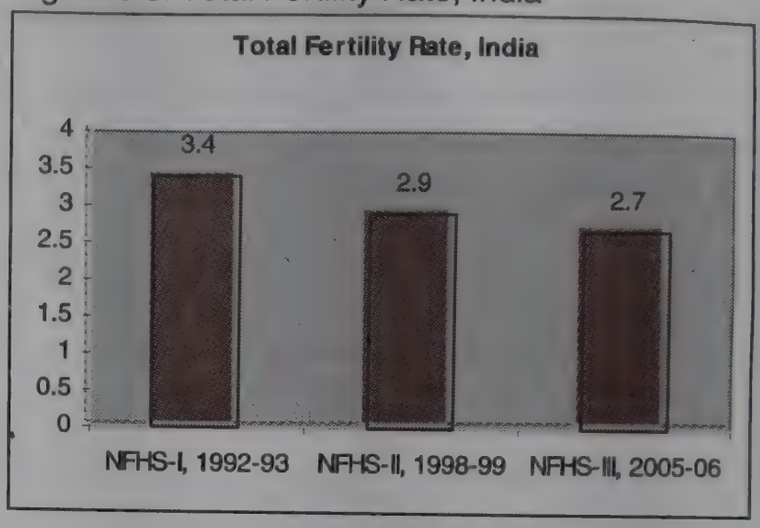


Bar Charts:

This is similar to the histogram except that the bars for different items are not joined together, but separated by a space. This is used when the horizontal axis has items that are qualitative or non-continuous in nature.

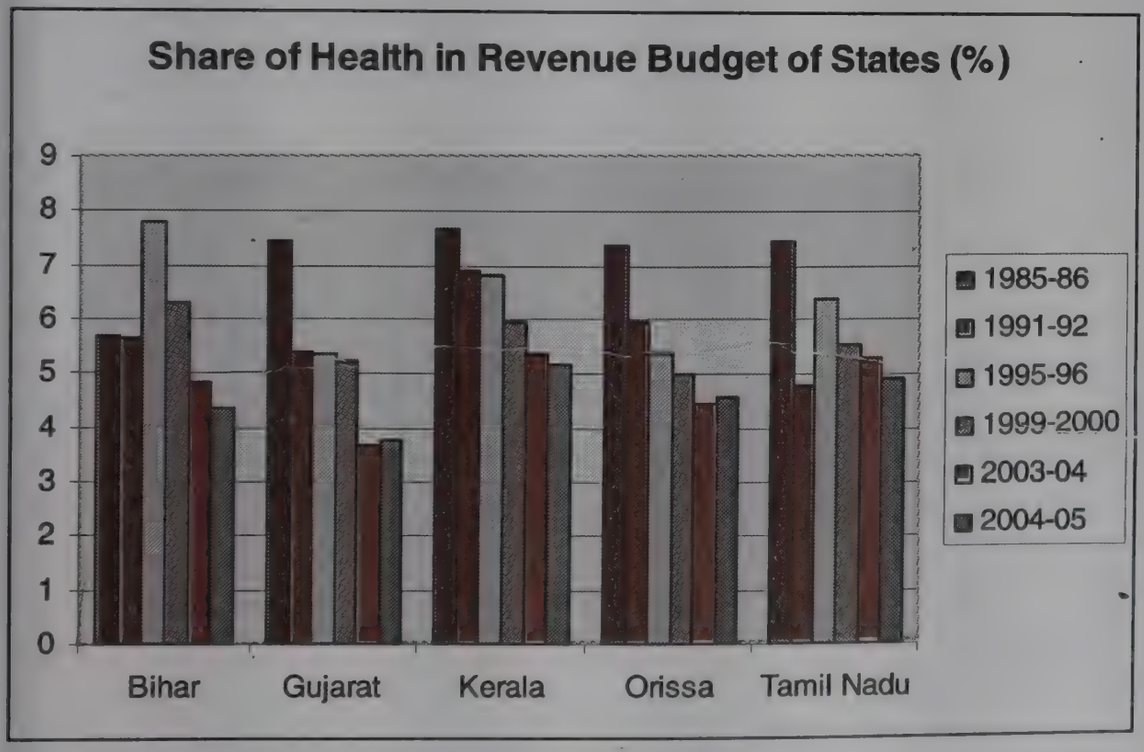
Source: Ministry of Health and Family Welfare (2006): 'National Fact Sheet: India (Provisional Data)', *National Family Health Survey-III*, International Institute for Population Sciences, Mumbai.

Figure 8.3: Total Fertility Rate, India




Comparative bar charts can compare changes for each item over time for some other variation.

Figure 8.4 Share of Health in Revenue Budget of Select States, 1985-2005

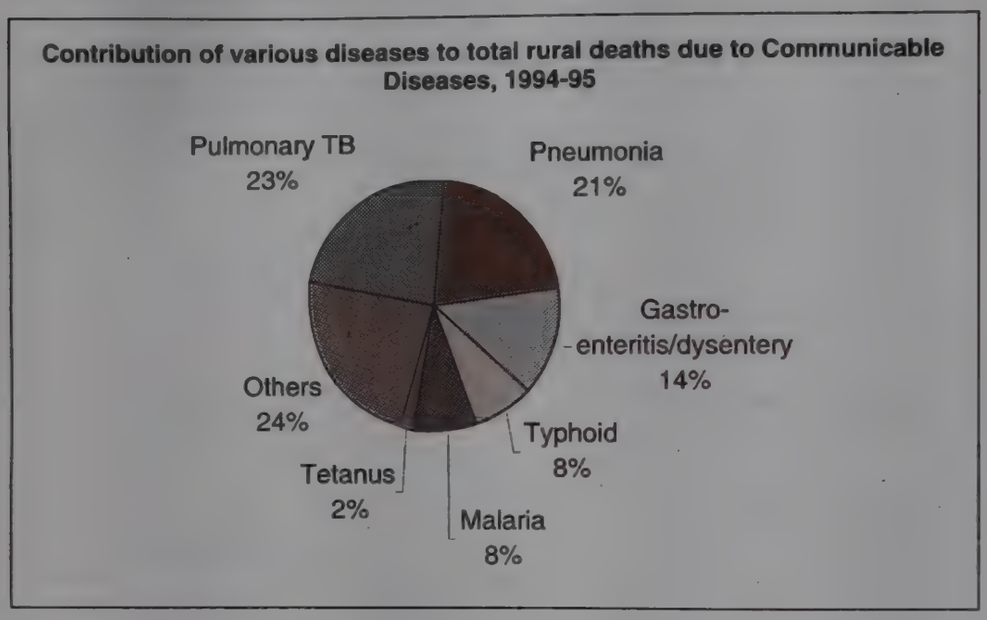



Source: Ministry of Health and Family Welfare (2005): *Report of the National Commission on Macroeconomics and Health*, National Commission on Macroeconomics and Health, Government of India, New Delhi.

Pie Charts:

Pie charts are used to display percentage distributions of single item- the budget of a hospital, the causes of infant mortality etc. Where the information cannot be expressed as components of a single item divided into percentages that add upto 100% a pie chart cannot be used.

Figure 8.5 Contribution of various communicable diseases to total rural deaths due to communicable diseases




Source: Registrar General of India (1996): *Survey of Causes of Death (Rural)*, Office of the Registrar General of India, Ministry of Home Affairs, Government of India, New Delhi.

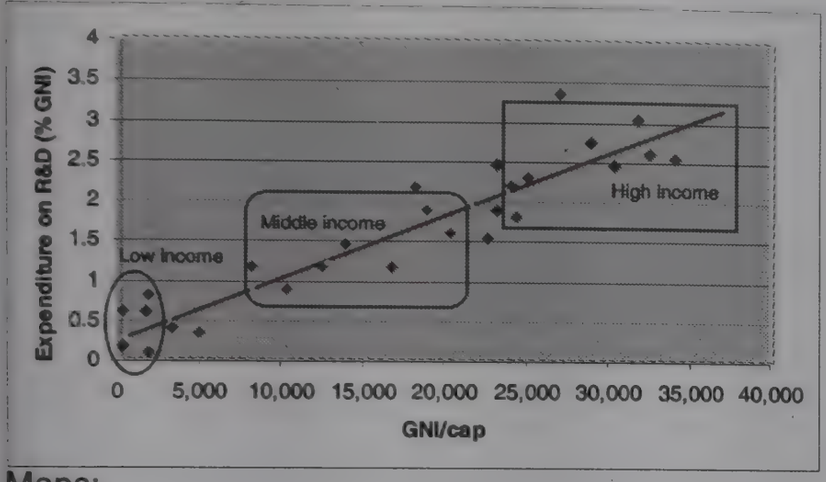
Two Pie charts side by side can be used to show changes in the percentage distribution or to compare two frequency distributions of the same component in two contexts.

Scatter diagrams:

These are to be used where two measurements of two connected variables have a bivariate distribution and one wants to display this. Each dot represents the measurement of one individual. They are useful to show visually the association or correlation between these variables. Whether there is an actual correlation or not needs statistical tests to determine .If these tests show a correlation then we can use the scatter diagram to visually display it.

Using data from a number of low income, middle income as well as high income countries, research evidence illustrated in the scatter diagram shows that: there is a direct correlation between, the level of expenditure on research and development (as % of gross national income) and the gross national income per capita of a given nation.

Table 8.6: Correlation between gross national income per capita and level of expenditure on research and development as a % of gross national income




Source: United Nations Economic Commission for Africa (2003)

Maps:

These are useful for geographic display of information. The areas for example where larva breeding for anopheles vector was discovered. Or the areas covered by primary health centers in a block etc.

Preparing a popular summary:

It takes skill to make a popular summary. Few administrators take the effort to read the whole report. They may even make a virtue of this fact. Yet one needs to communicate to them – and a precise popular summary would be very useful. This summary must use well laid out displays of key information. This can also be used for communication to the general public. In district planning every activity should be aimed towards communication with the general public.

A simple survey check list:

1. Make Clear quantified objectives.
2. Make a Good definition of cases and events.( put it down in training material for data collectors)
3. Ensure Proper sampling procedures and adequate sample size.( check with statistician)
4. Make well designed questionnaires. Translated well into local language. (It is a useful device to get the questionnaire back-translated to English by a third person to match original questions).
5. Good pilot trials of questionnaires, data entry and methods, equipment if any.
6. Ensure well trained interviewers
7. Good communication with population on reasons for survey and clear instructions to all for taking informed consent for their participation and respecting their confidentiality .
8. Ensure well supervised interviewers during data gathering.
9. Data entry and data analysis
10. Report writing , display of information, and communication of findings.

## The 30 cluster sample survey

Cluster sample survey is a very useful study design. The term "cluster" is used in different ways in epidemiology. Here we have used it as a way to sample a population in the community. Cluster sampling is a method for determining the proportion of individuals with an "attribute." This attribute could be the proportion of people with a disease (i.e. the prevalence of disease) or proportion who received an intervention, sometimes referred to as "coverage" as DEC mass drug administration to eliminate lymphatic filariasis. In this chapter our focus is on determining the proportion with or without a specific attribute. The term "communities" refers to the political/geographical entities of cities, towns, villages, etc. Most areas of urban areas have a listing of all communities with estimated population size. This list can be used to select communities i.e. "clusters" to be part of the survey. In rural areas either the village or the habitation is taken as the community.

The 30 by 7 cluster sample was developed by WHO in 1978. The goal of this sampling design was to estimate immunization coverage to within ±10 percentage points of the true proportion, with 95% confidence. The 30 by 7 cluster survey is a two-stage cluster sample. Before the sampling begins, the population needs to be divided into a complete set of non-overlapping subpopulations, usually defined by geographic or political boundaries. These subpopulations are called *clusters.* In the first stage, 30 of these clusters are sampled with probability proportionate to the size (PPS) of the population in the cluster. Sampling with probability proportionate to size allows the larger clusters to have a greater chance of being selected. The clusters are sampled with replacement, such that each cluster can be included in the sample more than once. In the second stage of sampling, seven subjects are selected within each cluster. Although the sampling unit is the individual subject, the sampling is conducted on the household level. The subjects are chosen by selecting a household and every eligible subject in the household is included in the sample. With traditional PPS cluster sampling, each of the seven subjects would be randomly selected. With the 30 by 7 method, however, only the first household is randomly selected (by a variety of different methods), and all eligible subjects in that household are sampled. After the first household is visited, the surveyor moves to the "next" household, which is defined as the one whose front door is closest to the one just visited. This process continues until all seven eligible subjects are found. Not all of the first seven households visited will necessarily have an eligible subject, therefore more than seven households may have to be visited. Also less than seven households may need to be selected if there is more than one eligible subject per household. The information from each cluster is then combined to obtain an overall estimate of immunization coverage. A step-by-step guide for conducting an immunization coverage survey is provided in the WHO document *Training for mid-level managers: the EPI coverage survey WHO/EPI/MLM/91.10.*

Why cluster sampling?

Simple random sampling **(SRS)** is simplest method of random sample selection. To perform SRS, one would need a listing of all eligible individuals in the population, and from this list, individuals are selected, such that each individual of the entire population has the same chance of being selected. For this we have use random selection method and to select individuals randomly usually the help of random number table is taken. The probable disadvantages in SRS are as follows: In many situations, a list of eligible individuals may not be available. In addition, random selection of individuals may not be the most efficient sampling method. For example, suppose we want to determine the proportion of children 12 to 24 months of age who are properly immunized in Sundargarh district of Orissa (which has a total population of around 18.29 lakh). How would one get a listing of the names of all the children?

Even if lists of names (with addresses) of eligible children are available, if one randomly select children from throughout the District, there will be the need of extensive travel to perform the survey. If the sample size is determined to be only 210 children, one may have to visit over 100 communities to perform the interviews.

To get over such difficulty a more efficient sample design is needed to limit the number of communities involved in the sampling procedure. This is where cluster sampling is useful. To evaluate the expanded immunization programme, one could first select communities, and then within each community, select eligible households and eligible individuals.

In a nutshell **the advantages** of cluster sample are:

1) For cluster sample we need only a very simple sample frame e.g. number of villages, cities, towns etc
2) It is easier and faster to do the survey because people are grouped together
3) It is often more acceptable to the local community – because a number of household are sampled and one would find it easier in explaining what is being done to the local community.

In general minimum number of clusters recommended in a cluster survey is 30. What is the rationality behind the number 30? The selection of 30 communities or clusters provides estimates representative of the larger population with a reasonable level of random error. Selecting significantly less than 30 clusters can occasionally result in estimates dramatically different from the truth, while selecting significantly more than 30 clusters does little to improve validity or precision. Therefore, the selection of 30 clusters is generally recommended when population is more or less homogeneous. Otherwise stratified ramdom sampling would do better. The next question comes **how to select clusters?** First we have to have the listing of communities with their population size and cumulative population. In most contexts we use village or habitation to be equivalent to a community.

Example:

Listing of Communities with population

| Community(village) | Pop. | Cum. | |
|---|---|---|---|
| Village 1 | 600 | 600 | |
| Village 2 | 700 | 1,200 ——— | Cluster 1 |
| Village 3 | 350 | 1,650 | |
| Village 4 | 2,000 | 3,650 | |
| | ——— | ——— | |
| Village N | 260 | 24,940 | |

There are a number of ways to select 30 villages from a list of all villages. One method would be to select communities using Systematic random sampling (SRS). SRS selection of communities requires **4** steps.

**Step 1:** Calculate the sampling interval by dividing the total population by the number of clusters to survey. In this example, 24,940 / 30 = 831.

**Step 2:** Choose a random number between 1 and the sampling interval (in this example, 831), usually using a random number table. For this example, assume the random number selected was 710.

**Step 3:** The first cluster in this example will be where the 710$^{th}$ individual is found based on the cumulative population column, in this example, community 2.

**Step 4:** Continue to select clusters by adding the sampling interval cumulatively. In this example, to identify the second cluster, 710 + 831 = 1,541, for the third cluster, 1,541 + 831 = 2,373, the fourth, 2,373 + 831 = 3,204, and so on —till the 30$^{th}$ cluster is arrived .

While Systematic random sampling is an acceptable way to select cluster (communities) , it complicates the analysis. There would be a need to "weight" the data. What do we mean by the concept of weighted analysis? In an immunization survey - say we sampled 10 children out of 20 eligible in community A, and 10 children out of 1,000 eligible in community B. In community A, 5 out of the 10 surveyed (50%) were immunized, compared to 100% (10 out of 10) in community B. What is the estimated immunization level of both communities? If we were to add 50% + 100% and divide by 2, we would estimate the immunization level to be 75%. However, this would be incorrect. The question is : "What is the estimated immunization level

of both ***communities***? " To estimate this, we need to "weight" the analysis according to the population size:

$$\frac{(50\% \times 20) + (100\% \times 1{,}000)}{(20 + 1{,}000)} = 99\%$$

In community A, each child surveyed represented 2 in the community; in community B, each child surveyed represented 100 children. Therefore, community B should be given more weight in the analysis compared to community A. The correct estimated immunization coverage for both communities combined is 99%, not 75%.

Note that when communities are selected using SRS; each community has an *equal* probability of being selected, regardless of population size.

In contrast to the above, there is a way to select clusters that will make weightage in the analysis unnecessary. Clusters could be selected whereby communities with large populations would be more likely to be selected than communities with a small population size. This method is called *proportionate to population size* (PPS) sampling. To perform PPS sampling, first, one needs a listing of every community and an estimate of its population size.

If two clusters are selected in a larger population, divide the community into approximately equal population sizes, and perform the survey in each area.

Analysis of cluster data: If data were collected using a cluster sampling design, then the data should be analyzed taking into account the cluster sampling. With PPS sampling, the only difference between analysis of the data as PPS versus SRS will be the width of the confidence interval, with the latter (! Please check) usually having wider confidence intervals.

How to select households in the cluster?

- Our aim is to select households that are representative of all households in a cluster (community).
- Sometimes this is difficult to achieve and we may need alternate methods.
- The method used to select households depends on the level of information available at the community level.

Ideal method: Get a list or map of all households. Number the households from 1 to N, then either randomly or systematically select households to be surveyed. Frequently a complete listing or map of households is not available. In these situations, an attempt is made to somewhat randomly select the first household (taking the help of random number table) and then the "next nearest household" method is used to select subsequent households.

**Example:** Suppose we do the study in a rural area where villages (clusters) do not have the list or map of households and it is not feasible to number each household within the limited period. In such a situation we can go to the central place of a village and then

- Randomly select a direction
- Count all households from center to edge of the community in this direction
- Randomly select the first household
- Then use "next nearest household" method for selecting subsequent households

Next nearest household method:

- After selection of the first household, the second household to visit is the one whose door is closest to the first household.
- The third household to visit is the one whose door is closest to the second (excluding the first household).
- This is to be repeated for subsequent households.

We may have to take ***creative approach*** to select the first and subsequent households. As per example; at the central place of the village spin a pencil on an even ground. When the pencil stops rotating, it will point towards a lane of the village and we may select this lane to get the first household. All the households in that lane from the center to the end are counted and a random number is selected between 1 and the total number of households. The household bearing this random number is the first household to be visited.

Then comes the question **how many samples (households) to be taken per cluster?** The rule of thumb is at least 10 per cluster and not more than 40. Because less than 10 per cluster can have estimates farther from truth and wider intervals. The precision can be improved going from 10 to 20 households per cluster, but there would be little improvement if we increase from 30 to 40. If we increase the data collection further and further we get smaller increases in statistical accuracy, but less quality of data collection as data collectors tend to get bored and lose interest.

### Data analysis

Data analysis is important aspect of any study. All the coded data are checked for consistency, completeness . The quality of data and gaps in it would become clear during tabulation. One needs to first construct dummy tables into which the data is tabulated. Once the tabulation has been done one can inspect it for patterns and interpretations. One may then apply statistical tests of significance where it is relevant. Much of this has become simpler with readily available computer software packages like Epi-info, STATA and SPSS. A statistician will be of great help. Univariate and bivariate analysis of some selected characteristics are performed and Crude Odds Ratio (OR) and 95% Confidence interval (CI) are derived. Significance level is taken at p =<0.05. Multivariate analysis like logistic regressions is performed for assessing the independent role of associated factors.

Reference : Ed. J P Vaughan & R H Marrow Manual of Epidemiology for District Health Management. World Health Organisation Geneva, 1989 reprinted 2000.

### I. Review Questions

1. What does epidemiology mean and what information does it provide?
2. What are the steps in planning an epidemiological survey?
3. What are the strengths and weaknesses of cross sectional and longitudinal surveys? Give two examples of issues you would like to use each type of survey for.
4. What are the features of a good questionnaire?
5. Describe the steps involved in doing a cluster survey for usage of safe drinking water in your district.

### II. Application Questions

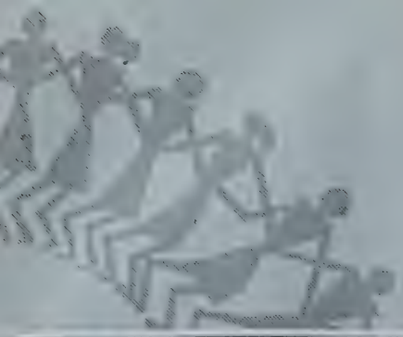
1. Some would seek to outsource the entire study. Which is perhaps justified. But why are these principles needed to be understood by any planner? What are the advantages of at least some studies being undertaken by members of the planning team? What part of the studies required for your district would you outsource and what would you get the team to do itself?
2. Study and contemplation is a culture in itself. Other then knowledge, being able to plan for a district requires imagination and it requires a certain type of analytic reasoning that flourished in a milleu where there is respect for academics and where academics is not divorced from reality. To what extent does the process of district planning itself generate such a culture? To what extent does making studies mandatory generate such a culture that makes future district planning more effective?

### III. Project assignment

Undertake as a group a survey in a block to make out the following:

a. Immunisation coverage.
b. Care at delivery.
c. Completeness of antenatal care.
d. Newborn practices
e. ORS use in diarrhoea.
f. Functionality of ASHA as assessed by the six parameters speficied in the ASHA module.
g. Any others you may wish to add.

Submit the summary of the survey findings.



# Lesson NINE

## Qualitative Research Methods for the District Health Plan

### In this lesson we shall discuss:

- What we understand by the term qualitative methods.
- How qualitative research can contribute to health planning.
- What the approaches to qualitative data collection are.
- What the strengths and limitations of quantitative and qualitative research are and how to combine them.

## UNDERSTANDING QUALITATIVE RESEARCH

Qualitative Research is a broad approach to the study of social phenomena, both descriptive and interpretive, and it draws on multiple methods of inquiry.

Qualitative study is not a single method. Though it draws from sociology and anthropology for many of its methods and modes of analysis, qualitative research cuts across many disciplines and fields.

Most of the research and data used in health care and in the field of public health is derived from quantitative studies and surveys. These include the commonly used NFHS and RCH surveys, which report on a range of indicators as rates or percentages, converting even complex aspects such as "women's autonomy and decision-making" into discrete questions, measures and indices. The methods of quantitative research are largely drawn from the experimental sciences and while they do provide important information, there are many limitations on their use in understanding social phenomena. Thus, the three major areas of study described below are generally poorly captured by quantitative methodologies, and yet they are crucial for health planning. These are precisely the areas to which qualitative research directs its attention.

Three areas which qualitative research develops as a focus for its study are :

a) The lived experience of individuals and groups: For example, qualitative research uses narrative analysis to attempt to describe the meaning of experience for individuals, frequently those who are marginalized or oppressed, by focusing on the ways in which individuals and communities construct stories (narratives) about their lives.
b) Society and culture: For example, qualitative research analyses specific events or objects of study in relation to the influence of structures of class, caste, status, ethnicity, gender, to tradition or to relationships of power and dominance.
c) Language and communication: For example, qualitative analyses pay particular attention to how meanings are created, how they are conveyed, and how they are understood.

In addition to these three foci, qualitative study also includes the concept of Action Research. It is important to understand the ways in which qualitative research challenges the claims of neutrality and objectivity of traditional social science. It calls on researchers to be conscious of their bias - not to be free of it. It requires that researchers reflect on who they are in the study, and be sensitive to their own personal biographies and how these shape their study. In Action Research it goes further to seek full collaborative inquiry by all participants, usually to engage in change-related activity in organizational, community or institutional contexts. When ideally executed, the distinction between researcher and participants blurs, creating a democratic inquiry process. Its commitment is much more to local contexts - not the search for a unitary Truth - but to understanding all that goes into creating change in particular contexts. It is often called participatory action research where the participants are from the beginning made conscious of the research objectives of the activity they are engaged in, and see change as emanating from them.

Health is an essential aspect of lived experience. Health status is both determined by social realities and contexts and it also constantly interacts with and informs the ways in which people experience their lives, especially in contexts of chronic poverty. Health systems are also not only technical systems but essentially social institutions and therefore health services and programmes are constantly influenced by the social, cultural and political contexts within which they operate. Since qualitative research draws on methodologies to study these aspects, it is immediately relevant to health planning and evaluation. And if it is sensitively done, it is a tool of immense value in the district planning process.

## DEFINING THE PURPOSE OF QUALITATIVE RESEARCH

Quantitative research admits to a wide variety of purposes, which may be broadly categorized as follows.

| Purpose of the Study | General Research Questions: |
|---|---|
| **Exploratory:**<br>To investigate little understood phenomena.<br>To identify or discover important categories of meaning.<br>To generate hypotheses for further research. | What is happening in this social programme?<br>What are the salient themes, patterns or categories of meaning for participants?<br>How are these patterns linked with one another? |
| **Descriptive:**<br>To document and describe the phenomena of interest. | What are the salient actions, events, beliefs, attitudes, and social structures and processes occurring in this phenomenon? |
| **Explanatory:**<br>To explain the patterns related to the phenomena in question.To identify plausible relationships shaping the phenomena | What events, beliefs, attitudes or policies shape this phenomenon?How do these forces interact to result in the phenomenon? |
| **Emancipatory:**<br>To create opportunities for participation and self-representation and the will to engage in social action. | How do participants problematize their circumstances and take positive social action? |

Example:

Early Age of Marriage is a problem in the Hasu community of Dhrawa district. In other communities, good campaigns against this social problem have resulted in the age of marriage going up. But, in spite of similar efforts, the problem has remained relatively unchanged in this group. Qualitative research was needed to incorporate action against this problem in the district plan.

Let us consider the various ways in which such research could be illuminating. First, it could give some insight on why early marriage is commonly practiced among the Hasu community. Second, it could help us understand why the social mobilization and education campaigns attempted so far seem to have failed. Third, based on a qualitative analysis of the prevailing beliefs and practices and the reasons

behind them, and a grounded understanding of the experience of past campaigns, it could yield more contextual, participatory and effective strategies to bring about social change.

The various purposes of such research can be placed within the framework represented above. It is important to note how these frames are distinct, as well as how they overlap in parts, and to be aware of the ways in which the ways in which the frame changes the subject, participants and methods of the research.

A) Exploratory/Descriptive: To understand the dimensions of the problem, Who within the community are more convinced of change and who are not? Which families practice this more? Who resist this practice and who support it? What beliefs influence this behavior, what are the prevailing attitudes? What are the social determinants of early marriage in this community – of economic status, of urban-rural residence, literacy and education and how do these influence outcomes? To begin with, such information is helpful in understanding the nature of the problem and the sources of resistance as well as the potential opportunities for change. It also probes deeply the context within which this practice is embedded by going beyond just labeling this a result of traditional beliefs and practices, to investigating the social and economic circumstances that generate and sustain such beliefs and practices. Building on this, data could then be used to identify persons within the community to take the message forward and lead processes of change. It could also be used to focus the messages and identify the audience for behaviour change communication.

B) Explanatory: Here there is a greater attempt at generalization, theorization and causal attribution. Thus, we may want to understand why other communities responded positively to the campaigns, but the Hasu community did not? How was the social mobilization campaign viewed by the community? Why did they respond to it in this way? This is, in a sense, a form of evaluation of the process of the intervention and the reasons behind its failure. It could generate knowledge about how to improve and adapt the intervention strategy to the particular context of this community.

C) Emancipatory: In this case, we want to use the qualitative research to engage those involved in the programme in considering their role in contributing to the problem and ultimately achieving and sustaining its negotiation and change. This could refer to working with government staff or non governmental organizations involved in the campaign to gain deeper insights into their own working, so that they can identify ways to improve their effectiveness and sustain higher levels of motivation. It could also mean developing a mode of research to involve the community in participatory analysis, negotiation and problem-solving. Here, the intervention and the research develop together and mutually inform each other and the ways in which the programme improves will become the object of the study itself.

From this example, it is clear that qualitative research can therefore be used in a variety of different ways and at different times in the district planning process.

- It can be very effective in understanding the nature of health status and determinants in various

contexts – why is the age of marriage particularly and persistently low among the Hasu?

- It can be used in the formative stages of interventions design – what are likely to be the most effective messages or strategies and the best sources of influence and support in such a campaign in the Hasu community?
- And it can be used to assess the process and outcomes of an intervention and its intended and unintended consequences – what was the process and impact of the BCC campaign on early age of marriage among the Hasu community and what were the reasons for this?
- It can also be used to generate useful and relevant questions for further research and for incorporation into large-scale questionnaires.

## METHODS OF STUDY

Qualitative research studies use a number of different tools. The main tools are:

a) In-depth or key informant interviews
b) Informal interviews
c) Focus Group Discussions
d) Observation & participant-observation
e) Review of documents: newspaper cuttings, files, publications, tapes, video films etc.
f) Constructing Case Studies Using Multiple Methods

### A. In-depth or Key Informant Interviews:

These interviews form a very important source of qualitative data. Since they are time consuming, both for the researcher and the interviewee and if possible are often conducted more than once, it is crucial that the interviewees are chosen carefully, once the researcher has been able to give some shape to the critical lines of questioning and has identified the key individuals for the particular question.

It is vital to understand the difference between a formally administered questionnaire and an in-depth interview. Even though the interviewer usually uses an interview schedule listing the main areas to be covered, this is not used as a questionnaire but more as a broad framework and provides a consistency on the kinds of information being probed, especially if there are a number of interviewers involved in the study.

The conversation proceeds freely, with the interviewer being able to guide the interviewee so that the relevance is maintained, Most importantly, the interviewer must be careful to follow up leads to a wide number of areas that may appear apparently unrelated, but could have a deeper association which only surfaces later in the research and analysis process.

One may want to break up an interview into two or three sessions if there is a lot of ground to cover. We may cover past experiences once and present situations at another time, or just explore different

dimensions of the issue in a number of sessions. The place of the interview also often influences its quality. For instance, a woman interviewed in a sub centre or panchayat building will respond differently if she is interviewed in her home. Within the home as well, her responses will vary depending on who may be listening in. The timing of the interview is similarly important. If the informant is distracted by the need to complete household work or rush to the field, the interview may not yield as much as it could.

Interviewing the "elite" – by which we mean persons in positions of privilege and authority, such as the District Collector, Health Secretary or Health Minister - has its own guidelines and cautions. Similarly, interviewing children of different ages requires another set of skills and sensitivities. In all cases, it is very important to be aware and sensitive to the positioning of the person that one is interviewing and the issues being covered.

The interviewer's listening skills are critical. Both listening and documenting should be recognized as critical skills, along with the ability to encourage and facilitate the interviewee. Anthroplogists in particular are trained to develop these skills.

Writing-up interview notes is an essential part of the research process. One should try to take down as much as possible during the interview and researchers often tape record their interviews. This is not always possible, however, especially if the presence of a tape recorder or constant noting seems to make the informant uncomfortable. Therefore, it is crucial to complete one's notes and transcriptions as soon as possible and as a general practice at the end of each day in the field. It is common practice to code names and places as one writes up notes and transcribes interviews in order to protect the anonymity of the informants and this is especially important if the material that has been collected is of a sensitive nature. Notes and tapes should be carefully preserved as "data" (a term usually used to refer to numbers!).

### B. Informal Interviews:

These are conversations picked up in passing in the field work process and because they often provide insights beyond those gathered in formal in-depth interviews, they can be useful additions to the researcher's understanding of the issue. However, since the subject is often not aware that he or she is being interviewed and how the information will be used, informal interviews can raise ethical issues. Moreover, the interviewer does not often have the chance to follow up on information and probe deeply, the comments may be misleading, especially if taking out of the casual context in which they were picked up. Therefore, while they should be used cautiously, insights from informal interviews can be used to complement formal interviews and focus group discussions.

### C. Focus Group Discussions

The focus group discussion (FGD) is a means of eliciting information through interview/discussions with a group. A group is in this context is defined as a number of interacting individuals representing a community

of interest". It is a focus group because this group's interest is focused on a set of issues to which they react as a group. This is a form of interview that requires the presence of a moderator who 'uses' the group as a device for eliciting information.

Focus Group Discussions have a number of advantages:

- FGDs can elicit background information about topics of interest before a more detailed questionnaire is prepared or a more specific focus for inquiry is identified . They are helpful in the process of constructing hypotheses and developing research proposals.
- FGDs can help understand in greater detail and interpret previously obtained quantitative results.
- FGDs can provide a picture of complex social relationships and a range of perceptions on a topic.
- By bringing together a group of individuals all linked to a common issue, FGDs can help one understand the reception of a new idea, programme or service and stimulate the articulation of creative solutions.

## How Group Dynamics Help

Unlike in-depth interviews, which draw out the experiences and perspectives of one individual, FGDs help the researcher get a wider and broader sense of a group's opinions on an issue, surfacing commonalities and points of diversity. As a methodology of data collection, it tries to make the most of group dynamics to generate valuable information. Group dynamics can be helpful in the following ways:

| | |
|---|---|
| **Synergism** | The combined effect of a group produces a wider range of information - more than the sum of the information of the individuals in the group. |
| **Snowballing** | A comment by one individual triggers off a chain of responses by others and each of these can set up more chains of response. |
| **Stimulation** | After some time people warm up or get stimulated by others into contributing much more and the general level of excitement and involvement in the topic increases. |
| **Security** | It is easier to be candid in company especially if they get reassured that their comments are not being identified with them personally. |
| **Spontaneity** | Since no one is expected to make a correct or complete response by themselves, many more are willing to contribute conjectures, wishes and possibilities. |

FGDs also have some organisational advantages: they are less expensive and time consuming than conducting a number of in-depth interviews and often make better use of a researcher's limited time. As more people are involved in the discussion, they allow for greater scrutiny and oversight of the process. And building on the energy of the group, often new ideas emerge in the course of the FGD that had not been considered previously. FGDs can also be a good way to identify key informants – individuals who are especially articulate or experienced often emerge in the course of the FGD and the researcher may select them for further follow-up through an in-depth interview.

However, precisely because FGDs engage a number of people in a conversation, they also require careful facilitation and

moderation. One has to remember that while FGDs are often considered more representative since they gather different individuals from the community in a common conversation, all groups have their own power dynamics which express themselves in this process. It is therefore important to keep the following steps in mind while putting together and conducting an FGD.

Specific Steps (after problem and purpose has been defined)

**1. Identification of Sampling Frame: Usually purposive**. The sampling frame depends on the expected outcome of the FGD, especially since it is seldom the only means of inquiry used. One can choose best performances and worst performances or the same principle could apply to good health status and poor status situations (polar choice). Or one can choose average situations. Or one can choose a sample from the sampling frame chosen for a quantitative study. But in most cases a number of FGDs would be needed.

**2. Identifying the moderator:** The moderator needs to be familiar with topic and most importantly have the required skills in facilitation. He or she needs to be able to prevent domination within the group and at the same time be self-aware so that the moderator does not end up dominating or over-directing the discussion. Above all, as with all qualitative research, the moderator must be aware of his or her own bias and have the ability to "manage" this.

**3. Preparing the interview schedule/guide or check list.**

**4. Constituting the Group – recruiting the members.** The group could be cohesive - all ANMs or all ASHAs for example, or a group of adolescent girls or boys. In other cases, it may be more helpful to construct a heterogenous group. Thus, if we are conducting a discussion on the promotion of institutional delivery we may want to bring in a selection of ANMs, some AWWs some sarpanches, some ASHA workers and some mothers with young children. A group is ideally about 7 to 15 persons strong. We would have to select persons carefully and inform them beforehand so that they can be present. Constraints that social and power relationships impose on discussion in the group should be kept in mind and a group should not be so heterogeneous that some cannot speak up at all.

**5. Conducting the Group:** The moderator has the task of ensuring that all the areas of key interest are adequately explored over a certain period of time, balancing the need to elicit as many comments and responses while managing the possibilities of straying too far off the main questions. There are a number of types of questions that the moderator can use to achieve this – the main research question, the leading questions, factual questions, testing questions (test the limits of a concept), steering questions to nudge the group back on track and so on. Silence itself can sometimes stimulate discussion and one needs to be able to use silence appropriately. It is important to facilitate the discussion, so that no one person or sub-group of persons dominates too forcefully and a supportive, non-threatening environment should be created.

**6. Analysis and Interpretation of Data:** This crucial part of the process requires strong documentation and analytical skills.. First, as has already been covered, it is important to do a careful and thorough job of writing up and transcribing notes from the discussion. Here, one needs to be attentive not only to capturing everyone's comments, but also to the dynamics of response and the manner in which the different perspectives were presented. Agreement and disagreement are not always verbalized and the researcher must be alert to the body language of group participants. Next, the data from a number of groups needs to be assembled. One often-used technique is the cut and paste technique, where each question that is explored could be cut out from the relevant part from each of the FGDs and pasted one after another under the corresponding questions. The entire list of responses can then by read through and summarised, allowing the researcher to draw on relevant theory to make broader generationalisations. There are even more quantitative methods of doing so, but these are not discussed here. For most of the district planning purposes, a simple assemblage and analysis of views on each sub-topic of discussion should generally be adequate.

**7. Writing the Report:** FGDs can be written up as separate reports, but they are often used as insightful and valuable material to illustrate particular aspects of a larger study, either as in developing key questions that can be further probed through more intense qualitative methods or a large scale quantitative survey. They can also be used alongside quantitative analysis to flesh out particular connections.

### D. Observation

Observation is central to all forms of qualitative research and is in a way inherent to the very practice of qualitative field work. Observation here entails the systematic noting and recording of events, behaviours and objects in the social setting chosen for the study. The observational record is often referred to as field notes - detailed, non-judgmental, concrete descriptions of what has been observed.

The researcher is not always a facilitator or interviewer, but a continuous presence, an observer who must try to be unobtrusive enough for the interaction to continue "as usual". This is obviously difficult to achieve, especially in a short period of time and if the researcher stands out from the community that he or she is observing. Observation also plays an important role in in-depth interviews and focus group discussions, but it is a continuous process of engaging with the social realities and dynamics that are part of the research question or subject. It could be what one observes as one accompanies members of the community to a health facility or sees their interactions with service providers, the childcare practices one observes within the household setting. A researcher may make observations when doing field visits with an ANM or AWW and be careful to note down their actions and interactions, from dealing with beneficiaries to how they record their own entries and registers. The ability to record the details and then relate it to the big picture – the social setting – takes some training practice.

### D-2. Participant - Observation

In Participant – Observation the observer becomes a participant in the activities of the objects of study. This is a very common method in more long-term anthropological and sociological field studies. Here, the researcher tries to immerse his or herself in the daily realities of the subjects, most often by living with them for a period of time. For instance an anthropologist may live in a village of a primitive tribal group to understand their issues. This is a technique often used for studying difficult groups or difficult issues, where causal observation or interviews may not yield sufficient information in understanding perceptions, views and practices. It is a very demanding technique and gaining access (entry and acceptance) in the community to be studied and finding oneself an appropriate role are all challenges that also require considerable knowledge and training. There are also very large ethical questions in such research, although if done with commitment , it can be highly rewarding. Participant observation is not a methodology that will lend itself to being conducted by full-time personnel without training as part of a district plan process. However, it could be very valuable to allocate a certain amount of funding to a department of anthropology or sociology or a research institute with these skills to study the problems and needs of marginalised communities.

### E. Review of Documents

A critical review of documents can be a very valuable and revealing exercise. Documents could include newspaper cuttings or government files, publications of an organisation, notices and pamphlets, BCC

material, kalajatha scripts and songs, television footage and documentaries. These kinds of materials provide insights into how different stakeholders view the objectives of different health programmes and interventions and how these views get inserted into larger frameworks and circulate through the programme environment, giving it its character. Here, the researcher is always attentive to the way in which words are used, what is being emphasised, and how the practices that they observe align or disagree with the language used in texts. This is sometimes referred to as a "discursive analysis" or an analysis of the prevailing discourse. Indeed, the District Plan itself – its very structure and content – can be analysed by a qualitative researcher in this way!

### F. Constructing Case Studies Using Multiple Methods

A case study is a complex strategy, that may entail multiple methods in its construction - interviews, focus group discussions, observations, document analysis, and even surveys to define the complex web of relations that helps understand a set of phenomena or events being studied. These are used best for studies focused on social relationships and culture. This is therefore an important strategy of analysis, not only a form of data collection. Case studies can be useful in drawing out the norm or can be used to illustrate unique or exceptional cases of performance or failure. Case studies can be made of large programmes or a district planning process itself or highlight specific issues or individuals that are notable.

Some examples could be:

Case study of planning for malaria control in a village.
Case study of peer educators at work in a HIV control programme.
Case study of decision-making in a district health society.
Case study of a very effective and enterprising ASHA and the various factors that have led to her success.

## ISSUES IN DATA COLLECTION

There are numerous issues in qualitative data collection and any researcher who will be undertaking serious qualitative research work will be trained to understand and prepared in these methodologies. Three key issues are highlighted below:

**Gaining Access:** This is clearly one of the biggest challenges as it is not an easy task to access people to talk freely and frankly. The issues of access also vary across techniques of data collection and the issue being studied. Thus, a simple introduction from a familiar person may be adequate to set up an interview or a FGD of a group of women beneficiaries in a village. But, one may need a whole process of interaction over weeks to gain access to a group of rag pickers or migrants to understand their health needs. When studying the issues of service providers, it is also difficult to observe them as they would have worked in your absence. Whatever the issue and individuals that one is working with, it is very important for the researcher to define the process of gaining access to the subjects and to remain self-critical and ethical in this process.

**Standardising data collection across researchers**: This is especially challenging in large studies where a number of researchers are involved. Due to the subjective nature of this research and the degree to which the characteristics of the researcher can influence the study, it is important to develop protocols of interviews and ensure that similar areas are covered under a common framework for interpretation. For example, if one is investigating the performance of a CHW programme in a particular district through a structured questionnaire or survey, a standard set of questions will be administered and a standard grid for interpreting answers will be developed. However, if this is being done through observation and a mix of formal and informal interviews by different qualitative researchers, two interviewers could not only have different ways of asking the question but also in interpreting meanings unless they share a common framework of approach and analysis.

**Quality checks and supervision**: This is as essential in qualitative data collection as it is in large sample surveys. Here, it is important to insist on the maintenance of detailed field notes and/or tapes. These materials should be submitted if required and can be reviewed for quality if required, honouring confidentiality agreements at all times. In large studies some cross-checking of such data with the final reports submitted by the data collector is essential.

## RELATING QUANTITATIVE AND QUALITATIVE STUDY

Having discussed the main purposes and methods of qualitative research, it is useful to put this in a larger research framework and to relate both quantitative and qualitative study. Some of the salient advantages and disadvantages of these two approaches are listed below:

| Quantitative Studies | |
|---|---|
| Advantages | Caution/Disadvatages |
| Higher accuracy: accuracy in measurement is increased because it can be quantified, there is greater control over the observer effect and the instruments are replicable between observers | It tends to miss the more complex and complete social picture. Generally captures only a few dimensions – or else the questionnaire becomes large and unwieldy and difficult to analyse. The need to quantify and construct measures even on qualitative issues – such as "women's autonomy or decision-making" can be useful but also limiting. |
| Higher generalisability: permit generalisations about large populations on the basis of much smaller representative samples and can help establish a sense of causality. Statistical analysis lets confidence level and range of error be estimated. | Method of drawing the sample and the sample size are critical to interpretation. Generalisation is strictly limited to the method in which these have been conducted. |
| Much easier to administer and manage. | Very expensive and can generate a large set of expectations on follow-up action. Due to the standardisation of questions and schedules, however, it limits any scope for adaptation and reorientation based on field response. |
| Essential where we need to estimate achievement of a numerical (quantified) goal – the infant mortality rate, the percentage of deliveries which had skilled birth assistance. | The choice of indicators is often influenced by donors and sponsors and other pressures to get wanted results. In large surveys local researchers and it is hard to control for their biases. |
| | Due to its presumed "objectivity" of the data, it can often wield considerable power even when the generalisations conceal contextual realities and the broad conclusions are accepted as a complete picture. |

| Qualitative Studies | |
|---|---|
| Advantages | Caution/Disadvatages |
| Accuracy with relevance: "An approximate answer to the right questions is better than an accurate answer to the wrong questions." The methods allow the researcher to constantly engage with field response and insight and remain grounded. | More open to subjective bias – and very difficult to defend against a charge of such bias. |
| Sees complex relationships and behaviours and determinants well and is able to relate events to social and cultural settings. | How much what has been studied relates only to that particular group and how much it can be generalized becomes open to question. |
| Essential for studying behaviour and perceptions and for planning behaviour change communication. | Provides no information on quantifications (except in variants like participatory rural appraisal) |
| Essential for looking at process outcomes. | Requires high degree of skills and cannot be done by everyone. High quality qualitative research is time consuming. |

## Combining quantitative measures with qualitative work

It should be clear from even this most basic framework of comparison, that there is a longstanding debate between quantitative and qualitative researchers and the kinds of results that their different methodologies yield. This is especially true of the tension between the aims of generalisation (is it applicable to all such situations) and relevance to the specific context ( is it true of that specific situation).. Increasingly however, researchers involved in social programmes are developing mixed methodologies and complementary approaches, which have the potential to yield deeper insights than either method might achieve on its own.

Quantitative and qualitative methods can be integrated in different forms. In *parallel* approaches, for instance, the quantitative and qualitative research teams work separately but compare and combine findings during the analysis phase. This is an approach more suited to very large scale projects where it is difficult to integrate methods for logistical and administrative reasons. *Sequential* and *iterative* approaches, on the other hand, aim for closer dialogue between the two methodologies at all phases of the research cycles. This approach entails the following:

(1) Using qualitative and participatory research techniques such as focus group discussions and in-depth interviews to get a grounded understanding of issues.
(2) Construct a survey instrument that integrates these understandings from the field.
(3) Derive hypotheses based on the qualitative research work and test these through survey data.
(4) Use qualitative methodologies to probe the findings and causal links suggested from quantitative surveys to understand the dynamics and dimensions of the issues in greater depth.

In these sequential or iterative approaches, qualitative work can help address some of the limitations or contradictions thrown up by quantitative data. For instance, one study of domestic violence found that only 22 percent of the female respondents being interviewed replied that their husbands had ever beaten them, which seemed to be a much lower rate than expected. After probing the issue with in-depth interviews, researchers discovered that the women had interpreted "beating" to mean severe beating when they lost consciousness or profuse bleeding or being taken to the hospital. Similarly, qualitative research through FGDs can lead to insights provided by voices left out of the samples of large quantitative surveys. For instance, while a survey may be able to capture representation from villages "near" and "far" from the main road, intra-village exclusions are harder to bring into the frame without too much stratification. Integrated approaches also allow the interpretation of quantitative findings in context and allow for a better interpretation of results. If we again consider the issue of domestic violence, through the quantitative survey it was found that there was a strong positive correlation between female sterilisation and the risk of violence. This was a difficult finding to explain but because the researchers had also conducted in-depth interviews and focus group discussions, they were able to find an explanation for this finding which the quantitiative study just could not have shown.

Research is an integral part of health planning and evaluation and as the discussion above has shown both quantitative and qualitative approach can provide very valuable insights in the planning process. It is therefore crucial for those involved in the process of drawing up and implementing these plans to be familiar with these methodologies, their strengths and limitations so that they are able to interpret the available data confidently. Most importantly, this will ensure that research doesn't remain external to the programme and programmers, but becomes a part of the fabric of the interventions design and implementation process, through action-research, ongoing critique and continuous improvements. It will also allow those involved in district plans to identify areas that require further research and investigation and motivate them to mobilise both the financial and technical resources to conduct a variety of studies that can be directly used to strengthen the quality and outcomes of health interventions in the district.

## REFERENCES

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## I. Review Questions

1. List the main advantages and disadvantages of qualitative and quantitative research.
2. What is the advantage of combining both together and what are the ways in which this can be done?
3. What are the various methods used for doing qualitative research? List and give the advantages and disadvantages of each.
4. What are the steps in conducting a focus group discussion?

## II. Application Question

1. A study of a large-scale community health worker (ASHA) programme has been commissioned and proposes to use both quantitative survey methods and a range of qualitative methodologies. How would you propose to combine the two? What are the kinds of questions that the quantitative survey should be used to answer and what are the dimensions of the programme that a qualitative study would focus on? What do you think are some of the findings that are likely to emerge from both these studies? On the basis of your experience and understanding of the ASHA programme, prepare a summary page describing the hypothetical findings for this study.

## III. Project Assignment

1. Conduct a Focus Group Discussion with 10 women in a village on the subject of institutional delivery with a view to understanding the reasons for poor utilization of facilities. Submit a report of the process. (Hint – remember to report the entire process, not just the group discussion!). How does the district plan get modified by such an input?
2. Write up a case study on selection of ASHA in a cluster of villages. OR on the introduction of insecticide treated bed–nets in a village. Use this information for modifying the district health plan and making it more effective.

# Annexure ONE

## Different Monitoring Indicators used in Different National Programmes

| | |
|---|---|
| **National Anti-Malaria Programme** | • Blood slide collected<br>• Blood slide examined<br>• Slide positivity rate<br>• Time lag in collection of slide and report<br>• Time lag in report and radical treatment<br>• Spray operations carried out after getting report.<br>• #received RT<br>• # referred to higher centres<br>• # developing complications<br>• # died |
| **National Leprosy Eradication Programme** | • # of cases treated<br>• # of cases detected<br>• # of default cases<br>• # of case complete treatment<br>• # of complicated cases<br>• # referred |
| **National Programme for Control of Blindness** | • # of cataract cases detected<br>• # of case registered<br>• # of cases operated<br>• # enlisted with eye problem<br>• # of camps organised |
| **Maternal Care**<br>*Antenatal care* | • Percent Pregnant women registered for ANC<br>• Percent of registered PW registered < 12 wks<br>• Percent PW received 3 ANC contacts<br>• Percent PW received TT2<br>• Percent PW provide with IFA (full course)<br>• Percent of PW identified with complications |
| *Intra natal Care* | • Percent of health facilities with facilities for institutional delivery<br>• Percent of CHC/FRUs providing EmOC<br>• Percent PHCs providing EOC<br>• Percent of complicated cases of pregnancy referred to CHC/DH<br>• Percent of dais/relatives re-oriented to aseptic and safe delivery and referral<br>• Percent health facilities with delivery kits in use<br>• Percent women aware of complications during pregnancy and referrals<br>• Percent FRUs functional and EmOC available |
| *Postnatal Care* | • Percent of PNCs given at least one visit during the first week after delivery |

| | |
|---|---|
| **Child Health**<br>*Neonatal Care* | • Number of sessions for baby friendly days organised<br>• Number of workshops for health providers organised<br>• Percent staff trained in resuscitation of new-born and essential neonatal care<br>• Percent of new born children weight within one week<br>• Percent of new born weighing less than 2500g |
| **Immunisation** | • Percent children fully immunised (0-2 years)<br>• Percent of immunisation sessions held against planned<br>• Percent of health providers received training in immunisation<br>• Percent health facilities (PHC/CHC) having cold chain equipment<br>• Percent of health facilities out of stock of any of the six antigens in last 12 weeks<br>• Percent of children below 3 years received 5 doses of Vitamin A solution<br>• Percent of health facilities out of stock with Vitamin A solution past 12 weeks<br>• Number of diarrhoea cases (children) reported and percent children given ORS<br>• Percent of health facilities out of stock with ORS in past 12 weeks<br>• Number of ARI cases reported during the year<br>• Percent children with ARI given treatment<br>• Percent children with ARI died during the year<br>• Percent pregnant women immunised fully with TT<br>• Percent of dais received re-oriented training in asepsis and safe delivery |
| **Family Planning and RTI Management** | • Percent couples having unmet need for contraception<br>• Percent couples with Unmet need provided with desired contraceptive<br>• Percent of new CuT users continuing for 1 year<br>• Percent of males out of the total sterilisation in the year<br>• Percent of JMVs recruited, continue to distribute contraceptives<br>• Percent of pregnant women below 19 years of age<br>• Percent of IUD acceptors screened for RTI and given treatment<br>• Percent health facilities having functional laboratory |
| **Prevention and Management of Complications of Unsafe Abortion** | • Percent health facilities equipped with MTP facilities<br>• Percent of health personal trained in MTP<br>• Percent of abortion cases followed up<br>• Percent of 2nd trimester MTPs performed at the district hospital<br>• Percent of women/adolescent aware of complications of abortion |

## Indicators for Quarterly Review

| | | | |
|---|---|---|---|
| **Maternal Health** | | | |
| | (a) | (b) | (c) |
| Pregnant women receiving at least 3 ANC check-ups | Nos. likely to received services up to the reporting period | Nos. provided services till the reporting period | Percentage coverage (b)/(a) x 100 |
| Teenage pregnancies registered | Total ANCs registered | Teenage ANCs registered | Percentage of b/a |
| Obstetric emergencies referred | | Emergencies referred | Emergencies referred |
| **Family Planning** | | | |
| No. of sterilisation acceptors | Nos. likely to received services up to the reporting period | Nos. provided services till the reporting period | Percentage coverage b/a x 100 |
| No. of continuing IUD acceptors | Nos. likely to received services up to the reporting period | Nos. provided services till the reporting period | Percentage coverage b/a x 100 |
| No. of continuing OP acceptors | Nos. likely to received services up to the reporting period | Nos. provided services till the reporting period | Percentage coverage b/a x 100 |
| No. of continuing Nirodh acceptors | Nos. likely to received services up to the reporting period | Nos. provided services till the reporting period | Percentage coverage b/a x 100 |
| **RTI** | | | |
| RTI services provided | No. of women screened | Nos. provided services | |
| Cured Rate | No. provided services | No. Cured | b/a x 100 |
| Recurrence Rate | Nos. provided services | No. of causes of reoccurrence | |
| **Child Health** | | | |
| Measles Case Fatality Rate | No. of measles cases reported | No. of deaths due to measles | b/a x 100 |
| Diarrhea Case Fatality Rate | No. of diarrhoea cases reported | No. of deaths due to ARI | b/a x 100 |
| ARI Case Fatality Rate | No. of ARI cases reported | No. of deaths due to ARI | b/a x 100 |
| Coverage of Children 3 years with Vitamin A | No. of children 3 year's to be provided 5 doses of Vitamin A | No. of provided services | |
| No. of children fully immunised | Nos. likely to received services upto the reporting period | Nos. provided services till the reporting period | Percentage coverage b/a x 100 |
| Percentage of NNT cases reported | Expected NNT cases | Nos. provided services the reporting period | Percentage coverage b/a x 100 |
| Percentage of diarrhoea deaths | Acute diarrhoea cases | Nos. provided services the reporting period | Percentage coverage b/a x 100 |
| Percentage of ARI cases reported | Expected ARI cases | Nos. provided services the reporting period | Percentage coverage b/a x 100 |

## Details of Diarrhea Diseases Control program in the district

| | |
|---|---|
| Number of watery diarrhoea cases 0-5 years | |
| Number of ORS packets distributed for 0-5 years | |
| Number of watery diarrhea cases 5 years and above | |
| Number of ORS packets distributed for 5 years and above | |
| Cases of dysentery 0-5 years treated | |

# Annexure TWO

## Templates for presenting the Situational Analysis in a District [1]

### A. DATA ON DISTRICT HEALTH SYSTEMS

This would be collected from internal routine reports, plus for some items a visit to the facilities for cross-checking and details. For some data like on logistics it would be adequate to visit a sample of the facilities.

#### 1. Public Health Infrastructure

| Health Facility | Number | | |
|---|---|---|---|
| | Sanctioned | In Government Buildings | In Rented |
| District Hospital/Medical College Hospital | | | |
| Sub District/Rural Hospitals | | | |
| UFWC | | | |
| CHC including Identified FRUs | | | |
| Block PHCs | | | |
| Sector PHCs | | | |
| Sub-centre | | | |
| Ayurvedic Dispensary | | | |
| Homeopathic Dispensary | | | |

**Note:** The above list of health facilities is an illustration. Classify the type of health facilities as per the state classification

#### 2. Human Resources

| Staff | Sanctioned | In-Position | Vacant |
|---|---|---|---|
| Chief Medical Officer | | | |
| Deputy Chief Medical Officer/ Additional CMHOs, Additional DHOs or RCHOs | | | |
| Medical Superintendent-Dt; sub-dt. hospitals | | | |
| Specialists | | | |
| Medical Officers | | | |
| Lady Medical Officers only if there is any separate cadre in the state) | | | |
| Lab technicians | | | |
| X-ray technicians | | | |
| Staff Nurse | | | |
| LHV | | | |
| ANMs | | | |
| Male MPWs | | | |
| Others: Support staff at PHC( compounder/ pharmacist/dressor/others) | | | |

1. Source: Adapted from National Rural Health Mission (2006): *Formulation of District Health Plans – NRHM for District Health Mission Members*, Ministry of Health and Family Welfare, Government of India, pp. 16-30.

## 3. Functionality of CHCs, PHCs and Sub-Centres (in terms of availability of critical staff position)

| Critical Staff | No. of facilities | Give Names of facilities | Key functionality indicators for each facility |
|---|---|---|---|
| CHCs with Ob&Gy, Pediatrician & Anesthetist (either qualified or trained) available | | A.<br>B.<br>C. | 1. No. of instiutional deliveries:<br>2. No of CS sections/surgeries:<br>3. Bed Occupancy:<br>4. Av. OP patients per doctor: |
| PHCs with medical officer available | | A.<br>B.<br>C. | 1. No of OPD patients per doctor:<br>2. No of institutional deliveries: |
| Sub-centers with ANM available | | A.<br>B.<br>C. | 1. Immunisation coverage:<br>2. ANC coverage: |

* Health personnel on the contractual basis should be reflected separately.

## 4. Status of Logistics

| Logistics Elements | Description |
|---|---|
| Availability of a dedicated District warehouse for health department<br>Stores room Organisation: adequacy at district/CHC/PHC level. | |
| At time of inspection- at district, block, PHC and sub-center level (see a sample of each)<br>• Essential drugs not in stock<br>• Drugs not in essential list but in stock | |
| Stock outs of any vital supplies in last year:<br>• at district hospital<br>• at CHC<br>• at PHC<br>• at sub-center | |
| Indenting Systems (from peripheral facilities to districts) | |
| Existence of a functional system<br>• for assessing Quality of Vaccine<br>• For quality of drugs | |

## 5. Training

Details about the training institution/s

| Name of the Institution: | Key issues |
|---|---|
| Physical Infrastructures Availability of lecture halls, place for training faculty, residential accommodation for trainees (men and women), dining hall, furniture's, safe drinking water and electricity etc | |
| Provide details of Faculty (Sanctioned and In-position) with designation and specialisation | |
| Availability of Teaching Aids Assessment of availability of common audio visual aids at the facility | |
| Availability of annual training plans for the last year and achievements of the plan? | |

## 6. BCC Programmes

| | |
|---|---|
| • Human Resources available for BCC Planning ie District Media officers, Dy Media officers and block level staff;<br>• Any trainings the staff has undergone in media planning or material development in past five years<br>• Any functional Mass media audio-visual aids such as 16 mm projectors, Video cameras, VCD/DVD players | |
| Which are :<br>• NGOs<br>• Private sector undertaking communication activities | |
| • - Did the district prepare a BCC plan in the past year?<br>• - If yes, what BCC behavior changes were focused on and what activities were planned and undertaken?<br>• - To what extent did intended changes take place:<br>• - In the absence of plan and measurement of outcoms, find out what BCC activities were undertaken? | |

## 7. Private Services

| Private Services Facilities | Name and location in case of sub district facilities. | Number of beds if any/ surgical care/gynec care/ |
|---|---|---|
| Multi-Specialty Nursing Homes | | |
| Solo Qualified Practitioners | | |
| Practitioners from AYUSH | | |
| Approved MTP centres in Private sector | | |
| RMPs (Less than formal qualified practitioner) | | |

## 8. Details of ICDS Programme

| Name of the block with ICDS Programme | Number of Anganwadi centers | | CDPOs and ACDPOs | | Supervisors | | Anganwadi workers | | Anganwadi helpers | |
|---|---|---|---|---|---|---|---|---|---|---|
| | Needed / Sanctioned | Functioning | S | IP | S | IP | S | IP | S | IP |
| 1 | | | | | | | | | | |
| 2 | | | | | | | | | | |
| 3 | | | | | | | | | | |
| 4 | | | | | | | | | | |
| 5 | | | | | | | | | | |
| 6 | | | | | | | | | | |
| 7 | | | | | | | | | | |
| 8 | | | | | | | | | | |
| 9 | | | | | | | | | | |
| 10 | | | | | | | | | | |
| | **Total** | | | | | | | | | |

S=Sanctioned; F=Functional; and IP=In Position

## 9. Elected Representatives to Panchayat Institutions

| Name of the block | Total panchayat villages | Total ZP members | | Total BDC/ Mandal members | | Total Panchayat Pradhans | |
|---|---|---|---|---|---|---|---|
| | | Male | Female | Male | Female | Male | Female |
| 1 | | | | | | | |
| 2 | | | | | | | |
| 3 | | | | | | | |
| 4 | | | | | | | |
| 5 | | | | | | | |
| 6 | | | | | | | |
| 7 | | | | | | | |
| | **Total** | | | | | | |

## 10. NGOs & CBOs

| Names of NGOs | Key Activities in Health/Nutrition/ community organisation | Block/Villages of NGOs operations |
|---|---|---|
| | | |
| | | |
| | | |

## 11. ASHAs

| Name of Block | Goal for district | Selected | Trained for —days | Functionality score over —% |
|---|---|---|---|---|
| | | | | |
| | | | | |

## 12. Additional Activities in the NRHM

| Name of Block | Expected achievement level | Achieved | Achieved desired quality norm |
|---|---|---|---|
| No. benefited under JSY | | | |
| No. of RKS established | | | |
| No. of CHC upgraded as per IPHS | | | |
| No. of sub-centres received untied funds | | | |
| No of village committees received untied funds | | | |

## B. SITUATIONAL ANALYSIS: PERFORMANCE OF VARIOUS HEALTH SERVICES AND PROGRAMMES

Data on each of the following services has to be given not only as total achievement figures for the district but also disaggregated for:

- Blocks, for geographic distribution
- Urban/Rural Divide
- SC/ST
- Gender in disease control programmes
- BPL/APL

Also for each we would get data from routine internal MIS as well as from a sample survey – like a 30 cluster external survey.

### 11. Utilisation of Maternal Health Services

- Percent of pregnant women who availed complete package of ANC services
- Percent of pregnant women who availed of any ANC service.
- Percentage of institutional deliveries
- Percentage of safe deliveries ( by nurse/doctor)
- Percentage of C-section deliveries

### 12. Family Planning

- Contraceptive use by methods
- Unmet need by limiting and spacing
- Sterilisation failures / any deaths (Use data from District Quality Assurance committee)

### 13. Child Health

- Full Immunisation coverage rate (12-23 months)
- Measles immunisation rates
- Percentage of planned immunisation sessions held
- Initiation of breast-feeding
- Exclusive breast-feeding
- Prevalence of any malnutrition
- Prevalence of grade III/IV malnutrition
- Vitamin A coverage with two doses each year of children in 9-36 months
- Prevalence of ARI
  - Treatment Seeking Behaviour
- Prevalence of Diarrhoea

- Treatment seeking behaviour
- ORS use

### 14. Malaria, Tuberculosis and Blindness

Information on API for Malaria: GIS display ideally ( includes Annual Blood examination Rate)
Endemic pockets

- Slide Postivity Rate and Plasmodium Falciparum Rate (PFR)
- Number of Fever Treatment depots( FTDs) and DDCs
- Number of hamlets who report FTDs as percentage of total number of FTDs

### 15. TB programme

- Annual total case detection rate per lakh
- Proportion of New Sputum positive out of Total New Pulmonary Cases
- Smear Conversion Rate
- Treatment Success Rate

### 16. Collect information for National Programme for Control of Blindness

- Cataract Surgery Rate (CSR): At least 80% of the surgeries should be having IOL
- School children, age group of 10-14 years, screened for refractive errors: (normally about 5-7% have refractive errors)
- Process indicators: screening camps organized, personnel trained, service delivery points having quality assurance guidelines, schoolteacher's trained, number of NGOs receiving assistance and beneficiary assessments.

### 17. Collect Information about activities undertaken for IDSP in the district

- Percentage of facilities sending their reports in time
- Up gradation of labs
- Training of staff in disease surveillance

### 18. Locally Endemic Diseases

- Names of most common endemic diseases( other than those on national programmes) JE, chikengunya, filariasis,goitre, kala azar, flourosis, arsenic, occupational diseases, Anthrax etc
- Approximate incidence/prevalence of each.
- Performance of control measures by appropriate process indicators for each.

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# Public Health Resource Network

## A Programme of Sharing Technical Resources to Strengthen District Health Programmes

The PHRN is a civil society initiative to support district level public health practitioners.The core of the programme is a 12-18 month distance learning programme. This course is being organised as a partnership programme of a number of Government and Non-Governmental Organisations and resource centres.

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|---|---|
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